COMING FEATURES

GENERAL

An Automobile Man Looks at Textile Industry
Changing Braiding Equipment from Round to Flat
Textile Packaging

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Simplified Spinning-Room Reports
Modern Warp Preparation and Weaving

WOOL

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KNITTING

Underwear Yarn Costs
Styling Half Hose
Uniform Needle Straightening

PROCESSING

Degumming Silk-Wool Mixtures
Bleaching Cotton-Rayon Hosiery
Finishing Glove Silk

ENGINEERING

Efficient Lubrication
Waste Heat in Water
Unique Dyehouse Construction
Unit Heaters

Textile World

(Formerly Textile World Journal) with which are combined *Textiles, Possell's Textile Journal* and *Textile Advance News.* Published Weekly, United States and possessions, $4 per year; Canada (including Canadian duty), $6.50; Mexico, $4; Central and South America and Pan-American Union, $6; other foreign countries, $8 U. S. currency, or 40 shillings. Single copy, 20 cents, excepting special issues.

Member A.B.P. *Member A.B.C.*

Textile World

ESTABLISHED 1868

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Winn W. Chase.....*Assistant Editor*
John Black.....*Assistant Editor*
E. S. Loemker.....*Art Director*
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Semi-annual Index is sent to subscribers on request. TEXTILE WORLD is also indexed in the Industrial Arts Index to be found in public libraries.

BRAGDON, LORD & NAGLE CO., INC.

Division of McGraw-Hill Publishing Co., Inc., 330 West 42d St., New York

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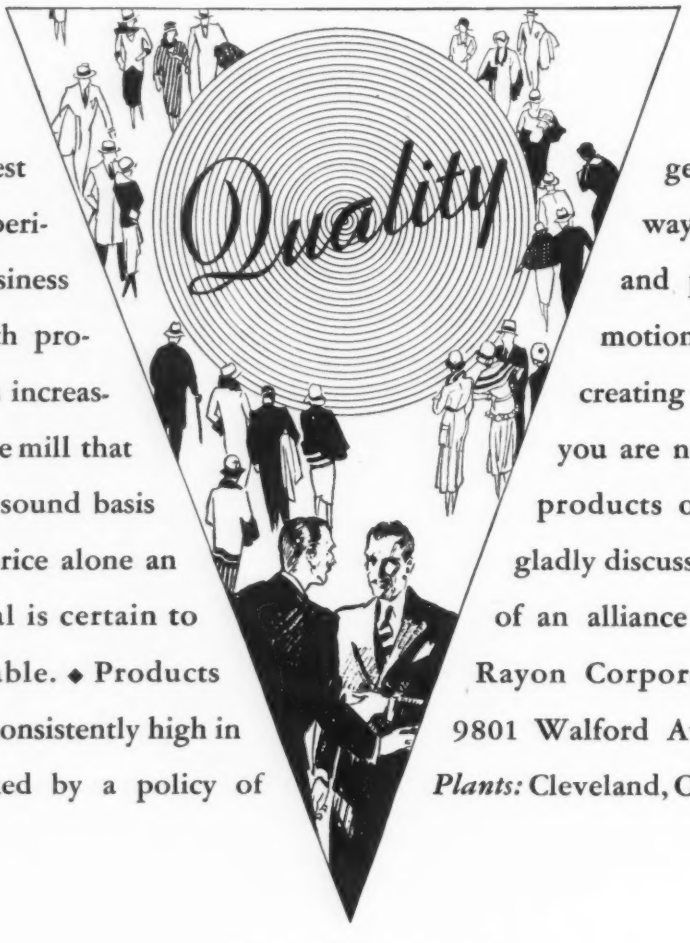

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May 28, 1932

Textile World

Vol. LXXXI, No. 22

Published every Saturday by Bragdon, Lord & Nagle Company
Division of McGraw-Hill Publishing Company, Inc., New York

Editor: Douglas G. Woolf

Textile World *to Be Issued Monthly*

A PLAN which the publishers have been developing for some time goes into effect next month. Commencing with the next issue, about June 15, Textile World will be mailed to readers the middle of each month instead of weekly as hitherto; in addition, a thirteenth issue, the Annual Review and Forecast Number, will appear at the end of February.

Editorial direction and policy of the paper will remain unchanged. Its editorial content will continue to be of the type that has brought it leadership in its field—but in a form, and of a frequency, which we feel will best meet the needs of its readers under present conditions. Through monthly publication it will be possible to interpret broad trends, thus meeting the need created by the increasing complexity of quickly shifting, and often transient, developments. Through monthly publication, it will be possible to make each issue a balanced issue, thus meeting the need created by the increasing inter-relationship of the various branches of the industry. It will also offer its readers the highest type of articles pertaining to processes and technical problems of textile manufacture, carefully selected and edited for timely needs and reader interest, thus meeting the problem created by increasing demands upon their reading time.

▼

As in the past, Textile World will be a publication edited generally for the textile industry, and specifically for each branch of that industry. However, it will be able to cover *in each issue* the interests of these two groupings: (1) *Individual functions of the industry,* as exercised by top executives, sales executives, superintendents, plant engineers, chemists, overseers, and other members of operating staffs; and (2) *Individual branches of the industry,* including the spinning, weaving, knitting and processing of cotton, wool, silk, rayon and other textile fibers.

This further step in Textile World's progress is in line with its established policy of changing its product to meet changing conditions and new demands. During its long history and that of its predecessors, both frequency and form of publication have been kept flexible. This policy will of course continue in the future; if at any time the publishers sense a need for change to better serve the readers, such a need will be met promptly.

▼

As a monthly, Textile World will supply a broad interpretation of market developments. It will supply informative material of practical help to its readers in their individual jobs. Finally, it will serve to co-relate the several branches of the industry, and the several functions within each branch, so that there may result a sense of unity in one of the great basic industries of the country.

The personnel of the editorial, advertising and circulation staffs remains the same, and Henry G. Lord, president of Bragdon, Lord & Nagle Co., and vice-president of the McGraw-Hill Publishing Co., who, with Frank L. Nagle, chairman of the board of Bragdon, Lord & Nagle Co., has been actively connected with Textile World for many years, continues executive direction.

The Week in Textiles

as Reflected in This Issue

General

Technical Sessions at Lowell
Featured at the technical sessions held by Lowell Textile Institute Alumni last Saturday were a discussion of variable-speed transmission for spinning and a slow-motion picture analysis of loom operation. *(page 50)*

Yarn Diameter and Fabric Setting
Calculations regarding the relative and actual diameters of yarns are found to be useful in determining the setting of fabrics. These same calculations also prove serviceable in finding the number of reed necessary for the weaving of a given fabric. *(page 52)*

Yarn Tensometer
Numerical determination of the tension on warpers, winders, quillers, and similar machines is made possible by the development of a new Tensometer. Of pocket size, it records tensions up to 75 grams. *(page 64)*

Warping Speeds for Narrow-Fabric
Various speeds are recommended for warping and beaming yarn for narrow-fabric work. *(page 66)*

Ondule-Warp Voile
The action of the reed and harnesses in the weaving of an ondule-warp voile are described. *(page 67)*

Macy Tests for Quality
In line with the general move toward quality, R. H. Macy & Co., Inc., New York department store, has doubled the scope of its testing laboratory and all textiles bought by store are first submitted to exacting tests. *(page 75)*

Cotton

Gossett Heads A.C.M.A.
B. B. Gossett was elected president of the American Cotton Manufacturers Association for the coming year at the recent convention in Atlanta, Ga. George A. Sloan, president of the Cotton Textile Institute and Governor R. B. Russell of Georgia spoke at the banquet. *(page 34)*

Throws Light on Merchandising
Dr. Melvin T. Copeland brought a stimulating message to A.C.M.A. members in his address before the convention on merchandising. He lauded *creative* merchandising as opposed to *initiative* merchandising. *(page 40)*

Ask Duty on Jute
A.C.M.A. members became enthusiastic over the aid their industry can obtain from a higher duty on jute and burlap. The fact that cotton substitutes for jute goods are available now and that the price margin between them is small, renders situation ripe. *(page 42)*

Variable-Speed Spinning
Interest has lately been aroused in a new, automatically controlled, variable-speed drive for ring-spinning frames and twisters. Interesting tests conducted on the application of this device to cotton spinning show an increase in production of about 15%. *(page 48)*

Bedspread Men Meet
The Bedspread Group of the Cotton Textile Institute at a recent meeting discussed the relatively satisfactory statistical position of the group. Members reaffirmed their attitude in opposition to piracy of bedspread patterns and recommended uniform terms of sale. *(page 58)*

Cotton Fairly Steady
Cotton remains relatively firm with some covering on the declines but little enthusiasm to follow up the advances. New crop reports are still too uncertain to be significant. *(page 71)*

Yarns Unchanged
Cotton yarns meet little change. Spinners however are favoring shutdown to further cuts in already below cost prices. *(page 71)*

Hope for Statistical Gains
Cotton goods, after a light May, hope for statistical improvement through more extended curtailment. Gray goods prices fell back to recent bottom at which resistance developed. *(page 75)*

Wool

Carbonizing Problems
It is not recommended that yarn be carbonized in the same tub in which it is washed and rinsed. The yarn can be left linked for carbonizing if means are provided to insure good penetration. *(page 66)*

Pointers on Wool Scouring
The various factors which may be responsible for the difference in color of two batches of the same wool scoured in different plants are given, especially variation in water. *(page 67)*

The Textile Outlook

TEXTILE prices have reached a point of stubborn resistance. It is more than previously evident this week that various branches of the industry have reached the point where it is more attractive to shut down than to carry price competition further—if the word "attractive" may be used for alternatives that admit no pleasant choice. The cotton goods market gives evidence of digging in at the low point lately reached; cotton yarn spinners are closing rather than accept current low offers; wool goods mills are extending their curtailment, likewise worsted spinners; knitters are waiting for what improvement summer weather may bring before further action; the rayon industry may shut down all viscose process units; silk mills are running light and although clearing stocks at a sacrifice cannot accept new business on such levels. Merchants generally regret the delay in Washington on budget and tax matters believing that settlement of these problems will release a certain amount of business now held in suspense. The presidential nominations in the near future and the election later hold much that is uncertain for general business but once they are out of the way no matter how they go, greater confidence may be demonstrated. On this negative hope the textile markets rest their expectation of improvement for next fall and winter.

New Slant on Curtailment

Blanket manufacturers have discovered that curtailment, while helpful in itself, is doubly valuable when used as a definite sales argument. The experience of this division has a broad significance to the industry as pointed out in TEXTILE WORLD Analyst. *(page 69)*

Coops and Others Meet

Representatives of the National Wool Marketing Corp. and of the independent wool dealers met this week in Boston for conference on new clip disposal. *(page 59)*

Yarn Resistance Increases

Worsted yarn resistance to the downward pressure is stiffening. Lower qualities are offered to meet demand for lower price but otherwise a steadier market is developing. *(page 71)*

Price Pressure on Fabrics

Wool goods mills note a fair spot call for summer lines, but prices are weak. *(page 75)*

Subscription Price Reduced

THE change in frequency of publication of TEXTILE WORLD effective June 1, as announced elsewhere in this issue, will be accompanied by a reduction in the annual cost to the reader. The domestic subscription price will be reduced from $4.00 to $3.00 a year.

All present subscribers will of course receive the benefit of this reduction by having their subscriptions extended in the ratio of the above change in rates; that is, the unexpired portion of each subscription from June 1 will be extended by one-third.

For example, if a subscription expires Nov. 30, thus having six months still to run at the old rate, the expiration date will be extended by two months, to Jan. 31, 1933. All such credits will be automatically adjusted on the subscription records of the publishing office.

Underwear Mills Selling Ahead

Improved call for summer lines of men's underwear finds certain leading manufacturers selling two to three weeks ahead. *(page 77)*

Belated Swimsuit Rush

Rising temperatures stimulated demand for bathing-suits among distributors who find summer at hand—and very little stock available. *(page 77)*

Boom Velvets for Fall

Broadsilk manufacturers talk confidently of a big season, beginning about August in transparent velvets. Meanwhile, printed sheers, especially georgettes are clearing swiftly at a price. *(page 75)*

Knitting

Designing on Circular Machines

To enable the knitter to duplicate samples or produce designs from his own imagination, a discussion of the means of securing figures or other designs on circular machines is provided. The first article deals with cut-presser work in spring-needle jersey fabric. *(page 44)*

Mesh Hosiery Firmer

Prices of mesh hosiery are stronger, thanks to improved demand and assimilation of liquidated stocks. Some fall novelty business placed. *(page 77)*

Silk

Raw Silk Sluggish

Silk demand is light, but prices hold steady, and importers are waiting news of cocoon quotations from Japan. *(page 73)*

Knitters Buy Spun Silk

Fair call from underwear mills was the only sign of activity in spun silk this week. Throwsters report practically no buying in any division. *(page 73)*

Rayon

Embargo on Viscose Yarns?

A general shutdown of rayon plants making viscose process yarns was viewed as imminent this week, following announcement of such a step by the Viscose Co. Producers strongly endorse project as helping fall prospects. *(page 51)*

Shutdown Plan Cheers Market

Further decline in rayon demand was noted, but trade was cheered by Viscose Co. decision to close viscose process plants for June, which is viewed as helping toward price stability. *(page 73)*

The Business Outlook

THE week's records are not especially promising for those expecting speedy improvement in the business picture under pressure of credit expansion efforts. Most indicators showed relapse in the level of industrial and trade activity from the first half of May as well as somewhat less favorable features in the financial situation. The unseasonal strengthening in steel output since the outset of the month has slackened slightly as automotive summer schedules are revised, but June is expected to bring a peak in car production, and some stimulus for structural steel demand is coming forward from increasing public construction in manufacturing activity and retail trade. Securities markets relapsed to new low levels with increasing anxiety over central-European financial difficulties, and evidence that Federal Reserve efforts to induce member-bank credit expansion have so far proven unsuccessful. Direct measures by local business-banker committees to break the credit jam may have better luck, but the tide of events is moving rapidly toward Congressional action to enlarge the powers of the Reconstruction Corporation and use the public credit to create employment where private credit agencies are unable to operate because of paralysis of financial confidence and industrial initiative.

—The Business Week.

Processing

Sjostrom Returns After 19 Years

Ivar L. Sjostrom after an interval of 19 years comes back to control the Lawrence (Mass.) Dye Works. He sold the plant in 1913 and bought it again in 1931. *(page 47)*

Cleaning Dye Machine

The presence of spots in finished hosiery is found to be the result of improper cleaning of the dye machine. A procedure is outlined which will insure cleanliness of the machine and freedom from imperfect hose. *(page 66)*

Perfumed Hosiery-Finishing Oil

Development of a perfumed finishing oil designed to provide a new sales appeal for hosiery is announced. It is dissolved in the last rinse after dyeing. *(page 64)*

A.C.M.A. Urges Creative Merchandising and Jute Tariff

to Increase Cotton Consumption

B. B. Gossett, elected president A.C.M.A.

The wealth of executive man power in the cotton industry of the South is nowhere better demonstrated than in the roster of past-presidents of the A.C.M.A. Even confining scrutiny of that roster to the period since the 1926-27 term, when James P. Gossett, father of the new incumbent, served, the caliber of the leaders of the association can be shown by a mere listing of the presidents in the intervening years: George S. Harris, the late H. R. Fitzgerald, A. M. Dixon, B. E. Geer, Cason J. Callaway.

B. B. Gossett, the new president, carries on this tradition. In our personal contacts with him, we have found him in the vanguard of all constructive moves in the industry; and yet in the background, in so far as any attempt to reap personal credit has been concerned. We know something of the time, thought and effort he has expended in support of cooperative undertakings; and of the personal sacrifice this has entailed. More than that, in our contacts with him we have come to know his humanness and his courage—two traits particularly needed at this time. His elevation to the presidency of the A.C.M.A. insures the continued virility of that organization.—*Editor.*

THE cotton textile industry, admittedly in an impaired condition physically and psychologically, had its medicine prescribed by its family physicians at the 36th annual convention of the American Cotton Manufacturers Association, at the Atlanta-Biltmore Hotel, Atlanta, Ga., May 20 and 21. The diagnosis offered by Dr. Melvin T. Copeland, director of business research, Harvard University, one of the first experts to examine the patient, was that the industry should abandon its antiquated point of view and indulge in creative merchandising to a much greater extent. He declared that imitative merchandising, the opposite of creative merchandising, was largely responsible for the existence of excess manufacturing capacity in the industry.

President Cason J. Callaway, while concurring with the other speakers in recommending aggressive and creative merchandising, was decidedly of the opinion that the patient should have a stimulant in the form of a protective tariff on jute and jute products. At the annual banquet Friday evening, amid an atmosphere significant of National Cotton Week, George A. Sloan, president of the Cotton-Textile Institute, was emphatic in his suggestion that the industry exercise its merchandising faculties in virgin fields, both at home and abroad, with particular attention to aggressive trade promotions and advertising.

At the business session Saturday morning, members of the association, considering the advice of their industry's diagnosticians, unanimously approved a resolution reaffirming their approval of efforts to secure an adequate tariff on jute and jute products. Further than that, they passed another resolution urging the President and Congress to lend every effort to balance the Federal budget and to reduce Governmental expenditures, in order that industry in general might know what to expect in the question of taxation.

Officers Elected and Resolutions Adopted

B. B. GOSSETT, of Charlotte, N. C., a vice-president of The Cotton-Textile Institute, whose active cotton mill connections extend from Martinsville, Va., to Anderson, S. C., was elected president of the association in the executive business session Saturday morning. Donald Comer, of Birmingham, Ala., who could not attend the convention, was elected first vice-president; while T. M. Marchant, of Greenville, S. C., was selected as second

What Happened at Atlanta

B. B. Gossett elected president of American Cotton Manufacturers Association; Donald Comer first vice-president, and T. M. Marchant second vice-president . . . Convention tied in with National Cotton Week; cotton suits were the official apparel for members . . . Competition between jute and cotton discussed; association goes on record favoring reasonable tariff on jute and jute products . . . Dr. Melvin T. Copeland's address reveals psychology underlying distribution survey being conducted for Textile Foundation . . . George A. Sloan points way to "go after business" . . . Secretary McLaurine urges manufacturers to retain faith in themselves and in their industry.

vice-president. W. M. McLaurine, of Charlotte, was re-elected secretary and treasurer of the association.

Charles A. Cannon, of Kannapolis, N. C., R. E. Henry, of Greenville, S. C., and W. S. Montgomery, of Spartanburg, S. C., were the new members elected to the board of government. The remaining elected members will continue to serve on this body: William D. Anderson, Sr., Macon, Ga.; S. Marshall Beattie, Greenville, S. C.; J. H. Cheatham, Griffin, Ga.; Allan Little, Alabama City, Ala.; A. M. Fairley, Laurinburg, N. C.; George H. Lanier, West Point, Ga.; Robert Lassiter, Charlotte, N. C.; W. H. Hightower, Thomaston, Ga.; Harry L. Williams, Columbus, Ga.; Thomas H. Webb, Concord, N. C.; and George M. Wright, Great Falls, S. C.

Donald Comer, elected first vice-president

Resolutions unanimously adopted at the executive business session included one reaffirming the position of the association in petitioning Congress to place an adequate tariff on jute and jute products. It was further resolved that "the officers be directed to map out and direct continued efforts to secure an adequate tariff on jute and its products; to prepare and distribute information on this subject; to appoint such committee or committees as they may deem necessary; and to expend such amounts for these purposes, as the funds of the association reasonably permit, in order to secure the enactment of such a tariff into law."

The President of the United States and members of Congress, in the second resolution adopted, were urged to balance the Federal budget by the reduction of appropriations, a decrease in waste and extravagance, and the efficient organization and operation of all branches of the Government; and that these steps be taken at the earliest possible date in order that the country can know what it must face in the matter of taxation.

Anothed resolution commended the efforts of all those promoting the growth of longer stapled cotton and recommended the continuation of such efforts. In addition to the usual resolutions of appreciation and condolence, special resolutions of sympathy for the families of the late W. A. Erwin and Arthur J. Draper, past-presidents of the association, were adopted by standing vote.

W. J. Vereen, of Moultrie, Ga., chairman of the committee on nominations, presented to the retiring president a medal of appreciation and esteem given annually in behalf of members of the association.

President Callaway's Address

DECLARING that increased domestic consumption of cotton is an urgent need of the industry and the cotton farmer, Cason J. Callaway, of LaGrange, Ga., in his annual address called upon members of the association to devote their continuous attention to all possible outlets for cotton products. His address, with the exception of the part in which competition between jute and cotton was discussed, a section that appears on page 42 of this issue, was in part as follows:

In my opinion, there is no economic problem today, either in the South or in the nation as a whole, so important as that cotton should return to a price more in line with the cost of production. The beginnings of upturns in past depressions have been started with the upturn in commodity prices, and it is reasonable to assume that this will be the case in the present situation. Since the production, manufacture and distribution of cotton probably employ more people than any other industry in the United States, since cotton is at the lowest price it has reached in 30 years, and since, in comparison with the cost of living, it is probably cheaper than at any other time in our history, it is reasonable to assume that cotton should be the first commodity to make substantial gains. The vital thing that America, and particularly the South, can do toward increasing the price of cotton is to increase its consumption. No matter what is done toward improving conditions by control of production or otherwise, the additional consumption of cotton is necessary, and, in my opinion, entirely practical.

The average price of cotton for the ten-year period 1921-22 crop to 1930-31 crop inclusive, taking the price of middling spot cotton each day for these ten years and getting an average, was 19.31c. per lb. During these ten years, the American cotton farmer, you know, did not make enough profit to do much on his mortgages. It took all the money that he received from this average price to allow him to buy his necessities, pay his taxes and have very little left for extravagances.

For this same period, the average carry-over of American cotton was 5,326,400 bales. The carry-over for 1932 will be approximately 12,764,780 bales. This figure is arrived at by taking the carry-over of last July, 8,919,000

bales, adding to this the amount of American cotton raised in the last crop, 16,595,780 bales, and deducting an estimated 12,750,000 bales to be consumed this year. This 12,764,780 bale carry-over is 7,438,380 bales greater than the average carry-over for the last ten years. This 7,438,380 bales additional carry-over will cost the American farmer next fall, hundreds of millions of dollars, and by depleted values of inventories of cotton goods and cotton products already in existence will cost the manufacturers, merchants and consumers of America, additional hundreds of millions of dollars, and this situation will continue until our statistical position is corrected. We know that this can be corrected in only one of two ways: Planting less or using more, and unfortunately Congress seems to have been determined, through certain of its appropriations, to encourage additional planting, rather than to restrict it.

As far as foreign consumption is concerned, we over here can do very little about it, and since this seven and a half million bales extra surplus is causing, and will cause, until depleted, this drastic situation, it seems to me that every energy should be turned toward additional consumption in America to accomplish this necessity. America has consumed, for the last ten years, an average of 6,006,000 bales. If we could increase the American consumption next year 100%, by this act alone, we would largely pull ourselves out of this difficult situation. Whether this enormous task can be accomplished or not—should not we improve this condition by accomplishing as much of it as we can, and shouldn't our best interests be directed toward this endeavor?

Cotton is already more generally used for more purposes than any other commodity known. There are, in fact, over 900 major uses for cotton. In spite of this, America uses a smaller percentage of her cotton crop than of any other agricultural product of any appreciable size. For the last ten years, the average percentage of the total growth of the following agricultural products consumed in America, was as follows:

Wool	99.55%
Corn	98.26%
Oats	98.11%
Wheat	74.10%
Cotton	46.07%

Yet cotton probably means more to the United States, with the exception of food, than any other commodity. Tremendous progress has been made during the last few years in styling, printing and dyeing cotton goods, and in the variety and quality of merchandise produced by allied industries, such as rubber, hardware, athletic goods, etc., great advances have been made. If the people of the country can be made conscious of the unprecedented values which exist, they will realize that now is the time to take advantage of them. Everything that is done, therefore, to inform the buying public with reference to cotton and cotton goods will have the natural result of increasing its consumption, thereby aiding the cotton farmers, manufacturers and merchants; and through the proper advance in the price of the staple, greatly benefiting America as a whole.

A large share of the responsibility for the increased consumption must rest upon the manufacturers themselves. I know of no industry in which consumption has been materially increased over the last ten years, where the responsibility of this increase has not been taken by the manufacturers themselves, no matter what article is under consideration. It seems to me, therefore, that during this period, the manufacturers should see that all outlets where prices materially affect consumption, are given the most thorough and continuous attention. Every effort should be made to insure the making up of the volume lost from normal channels by depression through the extended use of cotton in the channels where price makes it so attractive, from an economical viewpoint. Greater economy can be had from using rubber and fabric belts for power transmission, and improved production is also accomplished where the same care is used in selecting these belts as is commonly practiced in the selection of leather. At the present price it is cheaper for textile mills to use cotton wrapping than to use jute wrapping in shipping their products. Since, in addition, we employ our own cotton and our own labor, and produce a better looking package for our goods this substitution of cotton for jute should be made universally and immediately.

In his concluding remarks, President Callaway struck an optimistic note with the statement that, for the first time in many months, buyers are beginning to purchase goods because of a fear of scarcity. He estimated that it would require four months of spinning production of all cotton spindles in the United States to fill up the difference between present depleted inventories and normal inventories of cotton products. "Just as soon as we get a better statistical position of agricultural commodities," he concluded, "so that the fear of a new low price no longer exists, there will be forward buying to replenish warehouse stocks."

"If we cannot avoid some sense of responsibility for the state of the Southern cotton farmer, much more must we realize that the development and standard of living attained by our workers and their families during the past 20 years must be in the future, as in the past, a matter of care and concern to us. Economizing there must be, but no falling down or going back."—*Cason J. Callaway.*

Cason J. Callaway

McLaurine Urges Faith in Industry

APPEALING to southern cotton manufacturers to retain their confidence in themselves and in the great industry which they represent, W. M. McLaurine, secretary and treasurer, in his annual report on the activities handled through his office, presented at the Saturday morning business session, declared that his belief was "that the worst has passed, that the financial situation in much improved and that, although we may seem unconscious of any improvement, it is steadily and slowly approaching."

Secretary McLaurine's report described briefly many of the important things undertaken by the association during the year. Among these activities were the following: Efforts to educate the farmers and ginners concerning the advantages of wrapping their bales in cotton bagging; the formation of a national committee empowered to act with representatives of the National Association of Cotton Manufacturers, or other textile organizations, or to act independently for the association

in matters of national scope, whenever such action seems desirable; efforts to secure a protective tariff on jute and jute products; and cooperation in the organization of the General Arbitration Board which began functioning early in 1931 for the purpose of arbitration, conciliation and mediation in disputes arising in the cotton textile industry.

The annual report of the secretary and treasurer, in part, was as follows:

Our cotton committee has been very active in the conduct of the Cotton Arbitration Board, in the establishment and interpretation of the rules governing the buying and selling of raw cotton, and this year in particular, in May, when the International Cotton Standards were being reviewed in Washington, a very representative committee of our association participated in reviewing and adopting these standards. While, of course, it is impossible for a group of interests such as were in attendance at the Washington conference to agree in every particular, it is the consensus of opinion by our committee and by those who have used the standards since their adoption that there is some slight improvement.

Many people who accept the standards and arbitrations and cotton rules as mere matters of procedure are often unappreciative of the vast amount of careful technical and diplomatic work that has made these measures possible.

W. M. McLaurine
Secretary-treasurer
A.C.M.A.

In November of the past year the New Orleans Cotton Exchange passed a measure establishing full premium on 1⅛-in. and 1-in. staple to be delivered on contract, to become effective one year from date. This action was considered to be very detrimental to cotton manufacturing interests. The same measure was sponsored on the New York Cotton Exchange and the passage of such a measure would have been very costly and unfair to cotton manufacturers. Such a measure would lower the value of the present contract and increase the basis on 1⅛-in., 1-in. and better cotton. It would raise the basis above a just level, by reason of the conditions governing the establishment of staple values on cotton to be delivered on contract. Staple values referred to are determined by taking the average basis on 1⅛-in. and/or 1-in. on the spot markets designated by the Secretary of Agriculture. The proposed activities of the Board of the New York Cotton Exchange was tabled indefinitely due to the activities of our Cotton Committee.

This office, along with all other agencies, did everything that it could do to make National Cotton Week successful. We drove hundreds of miles and had dozens of conferences with merchants, business men, trade associations, chambers of commerce, women's clubs, and schools. We assisted in putting on six or eight style shows, and due to the fact that we found the press of the South thoroughly responsive, we issued columns of publicity upon this subject.

Along with President Callaway's intelligent and energetic effort to increase the uses of cotton, this office has cooperated to its fullest extent in conferring with the various bag manufacturers, various users of bags, linen supply companies, the promotion of cotton uniforms for workers and other activities of similar nature.

This has been a most strenuous year. Perhaps during no year in our lives have such vital problems been faced.

We are hoping that our new year will be able to see adjustments and plans that will bring back to us the confidence that we need so much. Therefore, we are pleading with every southern mill man to take courage and fight on valiantly, and not to lose his valuable contacts, chiefest of which is the American Cotton Manufacturers Association.

A.C.M.A. Committees Report on Activities

S. MARSHALL BEATTIE, of Greenville, S. C., chairman of the cotton committee, submitted a brief report. The contents of this report were summarized in the annual report of Secretary McLaurine which appears elsewhere in this issue. T. H. Webb, of Concord, N. C., reported on the Arkwrights committee; while Stuart W. Cramer, Sr., of Cramerton, N. C., discussed the activities of the National Industrial Conference Board and the Textile Foundation.

The difficulty that railroads are experiencing in meeting motor truck competition, particularly in the Southeast, was discussed in the annual report of Carl R. Cunningham, of Atlanta, traffic manager for the association, whose comments on this and other subjects were in part as follows:

The rail transportation systems of the nation are facing a situation never before experienced, in that practically every mile of rail line is now paralleled by motor truck routes, thereby converting all former local stations to competitive ones. Such a condition automatically takes from the rail lines the long existing prerogative to fix the level of their own rates, and they must now meet the competition of the motor truck lines which offer pick up and store door delivery, and much faster schedules, if they expect to handle any of the traffic.

Chief among the rates yet to be revised (as prescribed by Section 4 of the Act to Regulate Commerce of which the I.C.C. is requiring a literal observation) are those applying on cotton mill products, including sweepings, card strippings, etc. Difference of opinion and failure to agree upon the basis for dividing rates from the South to the North has caused such friction and dispute between the railroads which participate in the traffic, that it is next to impossible to accomplish the adjustment of important rate matters which vitally affect the ability of southern industry to market its product in the North. The situation is becoming more acute and the attending delay is costing the manufacturing interests of the South many thousands of dollars.

The rates on rayon from all producing points are to be reduced on account of truck competition, and the reductions for which we are now negotiating will approximate 30 to 40%. Efforts to cancel the long standing special carload rates on textile machinery from New England to the South are being made by the carriers. We are negotiating to prevent that action. A reliable trucking company is offering to handle machinery parts, less carload, from New England at through rates 10% less than the rail and water rates. We do not feel that this traffic should be diverted from the railroads, provided they will meet the new rates. We are now negotiating to that end.

Sloan and Russell on Banquet Program

AGGRESSIVE cultivation of both domestic and foreign markets, coupled with a determination to produce and price goods sanely, was the timely suggestion offered by George A. Sloan in his address, "Going After Business," which was one of the feature addresses at the annual banquet of the American Cotton Manufacturers Association, held Friday evening at the Piedmont Driving Club. Governor Richard B. Russell, Jr., of Georgia, youngest governor in the United States, sharing speak-

ing honors with Mr. Sloan at the banquet, urged reductions in governmental appropriations, Federal, State and local, in order that expenditures may not exceed revenues.

President Callaway, acting as toastmaster at the banquet, introduced the honor guests who, in addition to the speakers, included: W. Ray Bell, secretary of the Association of Cotton Textile Merchants of New York; Fred A. Rakestraw, president of the Cotton Yarn Merchants Association, Philadelphia; Russell T. Fisher, secretary of the National Association of Cotton Manufacturers; K. P. Lewis, president of the Cotton Manufacturers Association of North Carolina; W. S. Nicholson, president of the Cotton Manufacturers Association of South Carolina; Norman E. Elsas, president of the Cotton Manufacturers Association of Georgia; A. W. McLellan, president of the Louisiana Cotton Manufacturers Association; T. Scott Roberts, president of the Alabama Cotton Manufacturers Association; and H. Lane Young, of the Citizens & Southern National Bank, of Atlanta.

Mr. Sloan's address follows in part:

I am convinced that there are many markets for cotton awaiting aggressive promotional effort. Let's take for example the industrial field and consider the cotton bag. Certainly there is nothing new in the idea of using cotton bags but the possibilities for extending their use cannot be defined. A case in point comes to mind in connection with the Institute's recent negotiations with one of the largest cooperative marketing associations in America. At the suggestion of your vice-president, Donald Comer, we got in touch with the particular group with a view to convincing them of the economic advantages of cotton bags. Our representations were favorably received and sample bags were promptly submitted and promptly approved. The first order was purchased and tried out satisfactorily. As a result we have an important new customer for the industry now ready, I am told, with an initial order for 100,000 cotton bags.

Cotton is being successfully used for roadways. We should keep it continuously before highway engineers through their own technical publications. Cotton belting should be advertised in industrial and engineering circles. The multiple home uses for cotton in interior decoration, furniture coverings, hangings, curtains and wall coverings and for many other household purposes should be extensively advertised in publications read in the home and particularly by the housewives.

Over 900 major uses for cotton have been identified and there is no reason why many of these cannot be materially expanded. Several years ago when cotton mills were being criticized for continuing to turn out patterns which the public no longer desired, a veteran manufacturer replied that his mill was a specification plant and that he stood ready to make whatever his customers desired. This attitude I believe has been typical of a large section of our industry. We have built up a marvelously effective mechanism for producing cotton goods in endless variety and at low cost. But we must give increasing attention to coordinated group efforts to introduce cotton goods into new channels of manufacture and agriculture, to convert a minor use for cotton into a major use, and to translate a good idea into volume-producing business.

I do not minimize the difficulty of raising a large promotional fund because I have had some experience in that direction over a period of ten years or more. I know, however, that it would be much easier if everyone would admit and accept his own responsibility toward such a fund. An industry which is subject to the tremendous losses which we have incurred in recent years and yet whose products in 1929 were valued at a billion and a half dollars should be organizing itself to provide a cooperative fund of sufficient size for advertising its products in a comprehensive and adequate manner.

Another means of going after business is to build up our exports. Cotton yardage export volume in 1931 shrank to 70% of the average in the last 10 years. Too often we meet with indifference regarding foreign trade in cotton goods, probably owing to the fact that normally our exports are relatively a small proportion of the total output. In yardage, however, these exports are large enough to warrant our constant attention and the volume in years gone by justifies aggressive efforts to expand them.

Some of you may be thinking about the relatively high wages in this country compared with foreign countries, but high wages do not necessarily cause high unit costs. A Detroit automobile company has a number of branch factories in European cities. It discovered that where it has paid the highest wages, the efficiency has been greatest; in other words, the cost of production per unit has been the lowest.

Where it has paid lowest wages the unit cost of production has been greatest. I feel there is no reason whatever for feeling that differences in the wage scale materially handicap American export trade.

There is another side to this story of going after business; and that is how not to go after business. Certainly price cutting, and especially where it involves sales below the cost of production, should not be employed as a means of securing business. Some of us must pay more attention to elementary economics. If we have learned anything at all during the last several years it is that a shrinking demand must be balanced as promptly as possible by reduced production and that the lower scale of production must be maintained until market conditions justify an increase in output.

These are matters for the solemn consideration of every individual mill executive. Recently the industry witnessed examples of constructive merchandising that are deserving of the highest praise. Several mills and selling houses refused to become stampeded by the sudden break in print cloths from a level already below cost of production. I have especially in mind one house that gave notice that its lowest price on 5.35 64x60 was 3¼c. and immediately recommended to its mills that they increase curtailment so as to prevent an accumulation of stocks while goods were being sacrificed. That is what I call leadership and that is the particular kind of leadership under present conditions that is most needed. It is the type of leadership that should be widely followed as nothing else will make a greater or quicker contribution to market stability.

George A. Sloan, president of the Cotton Textile Institute, who spoke at banquet

No mill executive requires stimulation of leadership to refrain from selling below cost. If he doesn't know his cost he has defaulted on one of his first obligations to his stockholders. If he has a cost method that neglects inevitable items of cost his ignorance is inexcusable; he has his head in the sand; if he has an adequate cost system and persists in selling below cost, his action is even more inexcusable. The destructive practice of accepting prices which work out only a trifle better than the care and maintenance of an idle mill is today understood and appreciated by more mill executives than ever before. The education has been painful but a growing recognition of the dissipation of assets involved in this policy will certainly result in sounder conditions for the industry.

Governor Russell, whose address concluded the banquet program, spoke in a clear and straightforward manner about the need for governmental economy. "There has been a great deal of talk about economy," he declared, "but as a matter of practical application, very little has been done to reduce the staggering cost of government." Statistics were cited to show the enormous increase in expenditures by the Federal, State and local governments. In 1930, he pointed out, the total expenditures of the government in the United States amounted to 14.4% of the entire income of the nation. At the present time, he estimated, the percentage has probably reached 20% of the national income.

Thomas M. Marchant, elected second vice-president of A.C.M.A.

"The only way to reduce the cost of government is to reduce appropriations," Governor Russell declared. "The principle adopted in Georgia by the last general assembly should be extended to the national government, the State governments, and to county and municipal governments." He explained that Georgia last year reduced appropriations by $2,294,626 and thereby balanced the State's budget.

B. B. Gossett, The New President of A.C.M.A.

B. B. GOSSETT, of Charlotte, N. C., new president of the American Cotton Manufacturers Association, is equipped with an unusually wide knowledge of textile manufacturing and merchandising acquired during almost 25 years active experience in cotton mill management. The new head of the association, like his predecessor, is a son of a past president of that organization. His father, James P. Gossett, served as president of the association during the 1926-27 term.

Ben Gossett received his textile education at Clemson College and entered the cotton manufacturing game early in life. His first official position was that of assistant treasurer, Williamston (S. C.) Mills, to which he was elected on July 1, 1908. He has held many important positions with southern mills during the last 20 years, serving for various periods as vice-president and assistant treasurer of Brogon Mills, Anderson, S. C.; president and treasurer of Riverside Mfg. Co., and Toxaway Mills, of Anderson; president of the Pendleton (S. C.) Cotton Mills; president of Cohannet Mills, Fingerville, S. C., from 1919 to 1923, when this plant was sold to the Southern Franklin Process Co.; and as general manager of Panola Mills, Greenwood, S. C.

In the fall of 1921, Mr. Gossett resigned from his connection with Panola Mills and shortly thereafter moved to Charlotte, N. C., to become president and treasurer of the Chadwick-Hoskins Co., and of the Martinsville (Va.) Cotton Mill Co., Inc. He has continued to hold these positions and, in addition, is vice-president and treasurer of Gossett Mills, of Anderson, which was formed in 1928 by the merger of Riverside Mfg. Co., Toxaway Mills, Williamston Mills, Ladlassie Mills and the Gossett Dyeing & Finishing Co. Mr. Gossett also is president and treasurer of the Hoskins Corp., of New York, N. Y., a textile holding company.

The new A.C.M.A. president is a director in several other corporations, including the following: Turner, Halsey Co., of New York; the Piedmont and Northern Railway Co.; Calhoun (S. C.) Mills; Pelham (S. C.) Mills, and the Carolina Textile Corp., Dillon, S. C.

Active in the early organization of Cotton-Textile Institute, Inc., Mr. Gossett is a vice-president, and has served as a director and on the executive committee from the beginning of the Institute. Only recently he was appointed as a member of the cotton advisory committee of the Federal Farm Board.

A.C.M.A. Convention Flashes

SANDWICHED in between the morning and afternoon sessions Friday was a delightful luncheon given by the Atlanta Clearing House Association for the cotton manufacturers. Robert F. Maddox, of the First National Bank, acted as toastmaster and introduced those seated at the speakers' table. Responding with short talks were Cason J. Callaway, B. B. Gossett, George Sloan, president of the Cotton-Textile Institute; and Ronald Ransom, of the Fulton National Bank, president of the Atlanta Clearing House Association.

Mayor James L. Key, of Atlanta, delivered the address of welcome at the opening session Friday morning. He declared that the question of prohibition must be considered sanely and dealt with in an intelligent manner before this country can return to a sound basis economically and politically. He said he was in favor of "stabilizing the politicians" in the United States.

Stuart W. Cramer, in his response to Mayor Key's address of welcome, recalled that it was in Atlanta, in 1926, that the meeting was held which resulted in the organization of the Cotton-Textile Institute.

In spite of weather that was scarcely appropriate for light clothing, almost every cotton manufacturer at the convention was dressed in cotton clothes from head to foot. The banquet Friday evening was entirely informal and cotton suits of all kinds were in evidence. Many of the ladies wore cotton frocks at the banquet and the dance which followed.

The Citizens & Southern National Bank, of Atlanta, had textile products manufactured in Georgia conspicuously displayed in their handsome banking quarters as a contribution to National Cotton Week.

The cotton goods houses in Worth Street were well represented at the convention with the group from New York, including: Floyd Jefferson, David Jennings, Jarvis Cromwell, Robert Glassford, George Miller, Thomas Bancroft, Harry Bailey, Allyn B. McIntyre, T. Holt Haywood, John Fritz Achelis and James F. Hallinan.

New Methods to Meet Changed Conditions Needed in Textile Merchandising

WHAT is wrong with merchandising methods in the cotton textile industry?

It is hoped that at least a suggestive answer to this question may be forthcoming as the result of a research investigation now being undertaken by Dr. Melvin T. Copeland, president of Harvard School of Business Administration, under the auspices of the Textile Foundation and with the cooperation of a committee from the industry itself. Consequently major interest was manifested in the address presented by Dr. Copeland at the American Cotton Manufacturers Association in Atlanta last week.

Naturally it would have been premature for Dr. Copeland to indicate results of a research job still in progress. Nevertheless his thoughtful discussion of some of the problems confronting the industry afforded an insight into the psychology and viewpoint of the man directing the investigation. Dr. Copeland said, in part:

First, let us consider the make-up of the market. It is an axiom in marketing that any sound marketing program starts with the point of view of the consumers or users of the merchandise. If we take this as a starting point in looking at the marketing problems of the cotton textile industry, we find it necessary at once to recognize certain major differentiations in the market. The major distinction to be drawn is between the industrial market and the consumer market. The industrial market includes such items as filtering cloth for sugar refineries, tire fabrics, shoe linings, and many others. Consumer goods include sheets, towels, and other household goods, wearing apparel, and other items of personal use. In view of the decline in home sewing, the market for cotton cloth for wearing purposes has been shifting from a consumer market to an industrial market—cutters-up, and presents some particularly perplexing problems in the combination of industrial and consumer influences.

What is the practical significance of this distinction? In the first place, in the industrial market, many users buy in large quantities. This makes it possible for the manufacturer, if he chooses, to study the need of his individual customers. To take an example from another industry, one paint manufacturer catering to the industrial market employs trained men to go into the plants of customers to determine by study the precise type of paint suited to the particular needs of each large customer. The same sort of procedure has been adopted by various other manufacturers of industrial products during the last ten years. It is a method of market approach rarely used by cotton manufacturers.

What Advertising Can and Cannot Do

Take advertising, for another example. There is a place for advertising in the textile field, a greater place than it now holds, but the experience of companies elsewhere indicates that it is necessary to determine carefully the particular part of the entire sales job that the advertising is to perform. In the case of textiles there obviously are certain things which it is unreasonable to expect advertising to do. Consumers will judge the desirability of the design and feel of the fabric at the time of purchase and they are not likely to be swayed on these matters by advertising. On the other hand, there are certain qualities in cloth, such as its durability, the fastness of the colors when it is finished, and so on, which cannot be judged by the consumer at time of purchase and for which a reputation can be developed through advertising, provided the merchandise has the merits claimed for it. Properly applied advertising is a sales accelerator, but it cannot do the whole job of marketing, at least in the case of textiles, nor can it of itself correct basically unhealthy conditions.

Imitative Merchandising vs. Creative Merchandising

I wish to call to your attention one aspect of merchandising that appears in many industries and is particularly common in this industry—namely, imitative merchandising in contrast to creative merchandising.

In merchandising style goods there is inevitably a good deal of imitation. Fashion means imitation, but even there imitation often is carried to an unprofitable extent. During the last few years I have discussed the problem of style merchandising with numerous textile men, retailers and others, and all are agreed that there is a good deal of waste because of the failure to observe fairly obvious principles.

Each style runs in a cycle. It is first introduced and taken up by well-to-do consumers who make their purchase in a somewhat selected type of establishment. These are the style leaders and promoters. After the style has been accepted it enters into the second stage of the cycle, when it is reproduced in cheaper fabrics and garments and sold in the mass retailing institutions. Presently it reaches a third stage where it is being offered in fabrics and garments of the cheapest quality. Every successful style carries with it the germ of its own destruction. This means that any company operating in style goods should time its exit from the market for a particular fabric before the style has gone too far. The failure to time the exit by observing the number of imitators down the line costs the industry millions of dollars every year. Creative merchandising in this case means the adaptation of the style to the particular stage of the market in which the producer is to operate and the regulation of his activities so as to enter and leave the market with a profit.

In nonstyle lines if a manufacturer brings out a product which meets with success, it is common practice for other manufacturers to seek to imitate it at once, perhaps shading the quality. The result is that prices are cut to a point where no one makes a profit. This is going on in other industries, as well as in this industry. In fact, it seems to me that this sort of imitative merchandising is one of the many reasons for such widespread existence of excess manufacturing capacity.

By way of contrast with this imitative process, let us take examples from certain other industries. When the Dupont company brought out Duco paint and Cellophane for wrapping, or any one of numerous other products, it was doing a creative merchandising job. The Eastman Kodak Co. also has done a creative merchandising job. Such companies as these, in offering new products which better serve the needs of consumers, are benefiting both themselves and their customers. The Cotton-Textile Institute has done noteworthy work in developing new uses but its work cannot reach its full potentialities unless a large portion of the mills have a creative attitude toward their merchandising problems.

With your permission I should like to turn now to a consideration of some of the broad problems with which the industry is faced. I suggest that we start with a statement

to which I believe that you all will agree:—The cotton textile industry has some real troubles. These troubles are partly of your own making and partly the result of influences and conditions outside the industry, to which the industry has found it difficult to adjust itself.

There is no easy, simple remedy. The industry will benefit, of course, from an improvement in general business conditions. This industry, nevertheless, was not in a healthy condition prior to October, 1929, and we cannot be sure that a recovery in general business conditions is sufficient to rehabilitate the cotton textile business. We have a situation in this industry of the manufacturers producing and selling large quantities of cloth during the last six or seven years, but in many cases without profit.

Your trouble prior to October, 1929, was not primarily a falling off in demand but the inability of the mills to adjust themselves to the market situation. Who was to blame for this? It seems to me that obviously it was the industry itself. We cannot blame the anti-trust laws. Even without the anti-trust laws it would have taken a good deal more than mere agreement on price, for example, to put the business in a healthy state.

"Here as elsewhere the textile manufacturing industry, however, is gradually learning to take the customer's point of view in offering the sorts of merchandise desired and in providing the type of service needed. I lay especial emphasis upon this point because I have learned through my years of study of marketing problems that every sound marketing principle begins with a consideration of the consumer's needs and point of view. In this industry, as in some others, this basic fact is too often neglected."

—Dr. Melvin T. Copeland.

Basic Changes Affecting Textiles

I will turn now to a consideration of some of the basic changes that have been affecting the distribution of textiles. One of these is the automobile. The troubles or blessings of so many industries have been laid at the door of the automobile that I hesitate to mention it again. The automobile has had a real effect, however, on the character of the demand for textiles and on the methods of their distribution.

The second factor of change in the marketing of textiles to which I will refer is the one of chain store growth, which of course extends into the large cities as well as the small trading centers. Although chain stores have not as much influence in this trade as in some others, nevertheless they are growing and probably will continue to grow. Eventually the retail distribution of textiles seems to me to be likely to be largely in the hands of department stores and chain stores —the lines on which the field is to be divided between these two types of institution not yet being wholly clear.

One of the effects of these various changes has been to weaken the position of the jobber in the dry goods field. Before the war, the jobbers typically placed large advance orders with the mills, carried substantial stocks, and serviced the department stores, dry goods stores, and general merchandise stores to whose patronage they catered. During the last ten years, while prices have been declining, styles changing rapidly, and the trade in some staple lines fading out, the jobbers have been buying hand-to-mouth and carrying relatively small stocks. Chain stores and buying syndicates have cut into their urban markets and the automobile has transported a substantial part of their small town markets to the cities.

Effect Upon the Mills

From the mills' standpoint the changes that I have just referred to have made product planning and inventory control far more pressing problems than they were in the good old days of a generation ago. That is one of the major reasons why we have selected merchandising methods and organization as the subject for our current research project.

The concentration of buying power through the growth of chain stores and buying syndicates has added to the demoralization of the price situation in the textile industry. In this industry, so far as I can judge, price has long been a predominant consideration. The industry generally has been price minded—attention being focussed on price oftentimes to the neglect of far more important merchandising matters. It is one of your traditions.

On the matter of costs, so far as I can learn, most of the cotton mills have persisted in using an obviously unsound method of estimating costs. The usual procedure seems to be to figure costs on the basis of 100% operation, or perhaps more, and then to quote prices, if costs are taken into account at all, on that basis of full time operation. When it is found that the mill cannot secure enough orders to operate 100%, prices are cut or concessions offered in the hope that volume can thereby be secured for earning the overhead. Of course competitors meet the prices and concessions and each mill gets on the same share of the business that it was headed for before the price cut. It is not necessary for all mills to use the same percentage; let each mill figure at what rate it *reasonably* can hope to operate without getting into throat-cutting competition and take that ratio of capacity as the basis for distributing its overhead.

Closely linked with the point which I have just mentioned is the matter of piling up stocks when demand is slack. That is one of the evil traditions of the industry. A couple of generations ago with a more rapidly expanding market and a greater demand for staple goods, the piling up of stocks in dull periods may have been profitable. That era is gone.

Consumer's Viewpoint All-Important

Over a fairly long period of years the cutting-up trades have become a more and more dominant factor in the market for certain types of textile, but so far as I am aware, there have been no recent developments of especial significance in this field. Some mills have readjusted effectively their methods for dealing with the cutters; others are still lagging. Here as elsewhere the textile manufacturing industry, however, is gradually learning to take the customer's point of view in offering the sorts of merchandise desired and in providing the type of service needed. I lay especial emphasis upon this point because I have learned through my years of study of marketing problems that every sound marketing principle begins with a consideration of the consumer's needs and point of view. In this industry, as in some others, this basic fact is too often neglected.

A single company may be powerless to remedy the general situation, but if each will undertake its own housecleaning task the general effect will be a great improvement. It is only by such an approach as this that we can hope to operate our industries successfully under private ownership. We must have a broad, generous point of view as well as individual efficiency in order to preserve our industrial civilization.

Adequate Tariff on Jute

Urged by Cotton Manufacturers

R. J. Cheatham, who analyzed the cotton-jute situation

ENTHUSIASTIC support of efforts to secure an adequate protective tariff on jute and jute products was voiced by leading manufacturers in the round-table discussion at the A. C. M. A. convention, Friday afternoon, following the presentation of an address by R. J. Cheatham, senior cotton technologist, Bureau of Agricultural Economics, of Washington, D. C., in which the practical uses of cotton and jute were compared.

The round-table discussion was led by R. E. Henry, president and treasurer, Dunean Mills, Greenville, S. C., who introduced the subject of jute and cotton competition by quoting from the annual address of President Callaway, as follows:

Our going into this subject thoroughly emphasizes to us the injustice to the American cotton farmer and to the American cotton manufacturer of not providing for a fair protection in the tariff on jute. Certainly it does not seem right that the farmer should have to take six cents or less for his cotton to justify a manufacturer in using American cotton and American labor to spin this cotton. This seems doubly unfair when we take into consideration the burden that the American cotton producer is staggering under, since the general high tariff is causing foreign countries to retaliate by their restriction of the use of American cotton, as much as possible. It is conservatively estimated that proper tariff protection against jute and jute products would automatically create additional American consumption of over a million bales of cotton, with the added benefits all along the line arising from the manufacture of over 500,000,000 lb. of cotton.

The combined exports of all American products are only about 10% of the total production, but in the case of cotton, the exports have averaged over the last 15 years around 60% of the production. Furthermore, cotton has been the most valuable item in dollar volume of all exports. It is natural, therefore, that the bad features of the tariff are affecting American cotton and cotton goods more than any other American product and industry. So it would seem but simple justice to these interests, since cotton suffers the greatest loss from the bad features of the tariff, that it should be given his reasonable benefit from the good features of the tariff.

The present bill places a tariff on Egyptian cotton as a protection to growers of long staple cotton, but, of course, affords no protection to the great majority of farmers who grow the average staples, as is clearly proven by the fact that America exports 60% of this growth. As stated, jute is the import product which most seriously competes with our American cotton. The daily wage of an East India farm worker is 16c, and the average weekly wage of Bengal, India, mill workers is $1.80. The ability of the farmers and manufacturers of India to flood this country with their products rests solely upon wage scales and standards of living with which no amount of American initiative, energy and skill can compete.

Of course, it was not intended that the present tariff should place such burdens upon the American cotton farmers and manufacturers, but these are the results. Now that they are confronted with the problems of using up the largest carry-over of cotton in history, the emergency is given added emphasis. If the great mass of our people could be awakened to what it would mean, directly and indirectly, to open up this new outlet for over a million bales of cotton, and to put thousands of workers on jobs making cotton yarns and cloths to replace jute, I believe there would spring into action an irrestible demand for the simple justice of an adequate protective tariff on jute and jute products.

Cheatham Analyzes Cotton-Jute Competition

COMPARING the competitive uses for cotton and jute, in the light of the price situation which has developed over the last two years or more in cotton, Mr. Cheatham's address contributed to the fund of information supporting the movement to secure an adequate protective tariff on jute and jute products. His address, in part, was as follows:

In the five-year period from 1926 through 1930, the United States imported on the average a little over 947,000,000 lb. of jute. Some of this comes in manufactured form and some in unmanufactured form. The average annual imports of raw jute and jute butts in the same period amounted to a little more than 179,000,000 lb. and in manufactured form to slightly more than 768,000,000 lb.

Some additional quantities of burlap and other jute products enter the country as bags containing raw sugar, coffee, wool and nitrates, and find re-uses here as in cotton bagging and patches, but the amounts do not appear in the import figures. Various attempts have been made to estimate the equivalent amounts of cotton represented by these imports.

On a pound-for-pound basis they would equal approximately 2,000,000 bales of cotton. If, however, calculations are made on the basis of the respective weights of competing products of cotton and jute, it will probably be found that if cotton could be substituted for all the purposes for which jute is now used, the amount of cotton required to replace jute would be a little less than one and one-half million bales.

According to testimony given before the Ways and Means Committee of the House of Representatives in 1929, the jute imports may be distributed according to uses about as follows:

Yarns and twine	23%
Bagging for raw cotton	10%
Burlap bags and small quantities of burlap or wrapping not in the form of bags	67%

It would appear from this classification that the form in which jute is principally used in this country is in burlap. Of burlaps, about 80% was found by the Tariff Commission in 1922 to be used in bags and there is reason to believe that this proportion holds about the same today. The remaining 20% of burlaps appears to be used for baling materials, wrapping, upholstery, linoleum foundations and for other purposes.

Cotton contends for a share of the uses in all of these fields, but with more success in some than in others. Even with the present low price of cotton, jute is cheaper than cotton on a pound-for-pound basis. For this reason, the use of cotton in competition with jute can, of necessity, be economical only in those cases where a lighter weight cotton fabric will serve the purose of where the cotton fabric has greater durability or where, as in the case of flour bags, its closer weave will better serve the desired purpose.

While the price element is usually present in the competition, many uses are found, however, in which the comparative physical properties of the two commodities, or the particular nature of the use, have a strong influence in determining the respective share of the use that goes to cotton and to jute. In this connection, some rather interesting facts have been developed in a study which we have recently made of bags in the flour and feed milling industry where it was found that in 1931, 68½% of the flour milled in this country was packaged in cotton bags, ranging in size from 200 lb. down to 5 lb.; 21½% was packaged in burlap bags ranging in size from 140 to 98 lb.; while 10½% was packaged in paper bags ranging in size from 2 to 49 lb.

A recent development which seems to be favorable to cotton is the practice of packing and shipping such food products as potatoes, citrus fruits, onions and nuts in consumer size packages. This method of handling these products is favored by the retail stores because it saves the time which otherwise would be requried to make up and weigh the package in the store, as well as the loss of the commodity resulting from picking over and culling of the product by the store's customers. From approximately 3½ million consumer-sized packages of cotton used in 1930, the use in 1931 increased to over 10 million, or about 300%.

In some instances burlaps appear to have properties which give them definite advantages over cotton fabrics. Where stiffness and inelasticity are required, as for example in coat lapels or in linoleum foundations, cotton in the present state of our technological development seems to be less desirable. It is not impossible, however, that as researches can be made to add to the present knowledge of the properties of cotton and the methods by which certain desired results can be obtained in its use, some of those handicaps may disappear. Only a beginning has been made in the effort to learn how cotton compares with its competing fibers in such respects as strength, elasticity, cohesiveness and durability and in its resistance to disintegration under the influence of light, heat and moisture. A clear understanding of the purposes for which either cotton or jute can be economically used must wait upon the results of further work in this field.

The discussion on the question of the jute tariff brought out some interesting comments by several leading cotton manufacturers. Chairman Henry stated that, in his opinion, the protective tariff on jute should be justified, not for any profits that it might bring to the cotton textile industry or to its stockholders, but as a means of affording more employment for people in the United States.

Stuart W. Cramer, Sr., of Cramerton, N. C., said that he opposed the proposition for a high protective tariff on jute and its products two years ago because at that time there had not been enough cotton fabrics developed as substitutes for jute fabrics, and it would have been unfair to the Northwestern farmer to have imposed the jute tariff when no suitable substitutes made of cotton were available. Now cotton fabrics have been developed for the sole purpose of replacing jute products and Mr. Cramer declared that he is willing to support the association's effort to secure an adequate jute tariff on the hypothesis that we have fabrics that can replace jute.

The importation of jute into this country, T. M. Marchant, of Greenville, S. C., declared, has closed down cotton spindles in the South. He believed that a tariff on jute and its products would amount to more in increasing the consumption of cotton than the results of all the money spent by the industry through the Cotton-Textile Institute. George M. Wright, of Great Falls, S. C., also declared that now is the time to wake up and demand a tariff on jute. Charles A. Cannon, of Kannapolis, N. C., pointed out that the 7c. per lb. import duty on long staple cotton benefits only a very small group of cotton planters in Mississippi, but that a tariff on jute would be a great help to the vast number of farmers who grow low grade short-staple cotton.

E. Kent Swift, president of the Whitin Machine Works, said that the National Association of Cotton Manufacturers had endorsed the idea of a tariff on jute and felt that the New England cotton manufacturers would give their aid to the proposition. Others speaking in favor of the proposed tariff were: President Cason J. Callaway, John H. Cheatham, Hatton Lovejoy and J. R. Killian.

THE pioneering work which Leavelle McCampbell started more than three years ago, in urging an adequate tariff on jute and jute products as protection for American cotton manufacturers and farmers, is bearing fruit and gaining supporters. Much of the opposition voiced in 1929 has been converted into endorsement. Stuart W. Cramer's frank admission of a changed viewpoint, due to the fact that today there are satisfactory cotton substitutes for jute materials, was one of the highlights of the discussion of this subject at the Atlanta convention.

Much water has gone over the dam since 1929. In addition to the development of satisfactory cotton substitutes, mentioned above, there is the factor of an entirely changed competitive relationship between cotton and jute, due to the price collapse of the former.

A study of these facts and of the other points brought out at the Atlanta session leads one to the inescapable conclusion that, under conditions as they exist today, the association acted wisely in going on record as favoring a reasonable tariff on jute. Equally wise is the suggestion made by Cason J. Callaway, retiring president, that a modest sum of money be spent on informing cotton growers and manufacturers of the facts in this important matter.—*Editor.*

Design Knitting on Circular Machines

By J. Frederick Cahill
357 Fourth Ave., New York

◆ *This is the first of a series of articles by a knitting consultant of long experience in the production of figures and other types of design on circular machines. The articles are written to give practical knitters a better understanding of the designing capacity of their equipment and to suggest means for duplicating samples or producing designs from their own imagination with less difficulty and possibly with more satisfactory results. Mr. Cahill begins with a discussion of cut-presser work in spring-needle jersey fabric. Later he will discuss latch-needle designs and finally will conclude with an article on rib fabrics.*

MUCH has been written and published on the topic of pattern knitting; and much more will probably be written as our knowledge of the subject widens, for we have not yet reached the limit of possibilities in this line. Some of the published matter on the subject has been written in such an involved, technical style that, while correct in the information conveyed, it is beyond the comprehension of the average knitter. Other writers have seemed to assume that every knitter knows all the terms and methods employed and have proceeded to write glibly of "patterns," "sections," "divisions," "lap," "right hand," "left hand," and other terms that apply to some knitting machines and not to others.

In "Science of Knitting," by Ernest Tompkins, such terms as "clockwise" or "anti-clockwise" as applied to the direction of motion of the machine, "right hand" and "left hand" as applied to the design, and "top" and "bottom" as applied to the fabric are very apt to create confusion in the minds of the less-experienced knitters.

In most discussions on this subject the treatment is synthetic; that is, a "pattern" (a series of cuts and prints in a wheel) is selected, and the author then proceeds to show how different designs may be produced from this pattern by an increase or decrease in the number of needles upon which the wheel operates.

In the experience of the average knitter, however, it is usually the case that he starts with a completed design, either of his own devising or in a sample swatch brought to his attention; and it is up to him to adapt that design to the facilities he has at hand and either duplicate it or approximate it.

The facilities at hand may vary widely and be greatly different from the equipment on which the sample swatch was made. Such equipment may run the whole gamut of circular knitting machines using either latch or spring-beard needles and may be divided into two general classes, each class having characteristics and possibilities peculiar to itself, as follows:

A. Rib-Knitting machines, with two sets of needles parallel to each other and operating in planes at almost any angle in relation to each other, with the knitted fabric passing between them. This class includes all latch-needle machines which operate with cylinder and dial, spring-needle rib machines with either sinker wheel or sinker ring, and also latch-needle machines with a circular external plate and internal cylinder.

B. A group of machines including the open-cylinder, latch-needle types (with or without sinker top); circular plate machines with latch needles working in a horizontal plane and with hooks pointing inward; and also the various kinds of loop-wheel, spring-beard-needle machines. This type of machine produces fabric that is variously called flat knit, jersey cloth, shaker knit, etc.

As this is being written for the practical knitter with some knowledge of figure and color work, a detailed description of the characteristics of the various machines is omitted excepting in such instances as may be necessary to clarify a point.

In both classes of knitting machines are found some machines with the take-up above the knitting mechanism —the completed fabric moving upward—together with other machines in which the take-up is located below the knitting mechanism, in which case the completed fabric moves downward. Some latch-needle machines rotate the needle cylinder and take-up, some rotate the cams and yarn stands; and, of both kinds, some turn clockwise and some counter-clockwise. Some loop-wheel spring-needle machines rotate in one direction and some in the opposite direction. These conditions tend to make such terms as "above" and "below," "up" and "down," "right hand" and "left hand," "front" and "back," and "inside" and "outside" quite confusing when applied to a description of the fabric or design as seen on the machine.

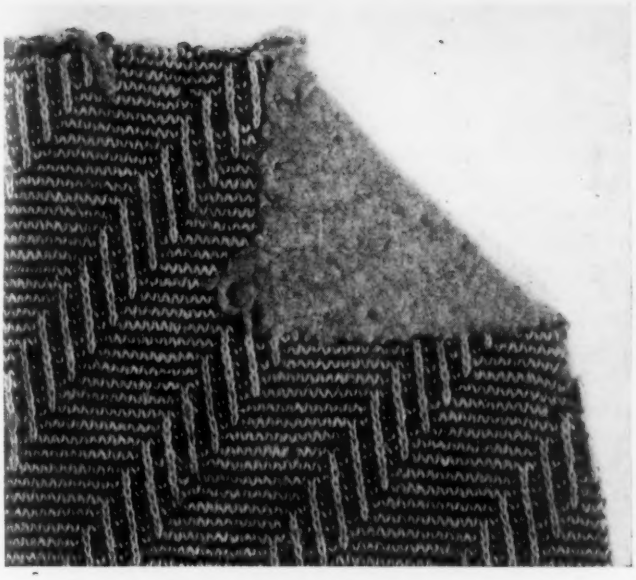
Clarifying Knitting Terms

As the machines specified in class *B* are very widely used for design knitting in both latch-needle and spring-beard-needle work, that type will be considered first. The face of the fabric in such knitting is usually the side on which the figure or pattern shows most distinctly; but this is not always the case.

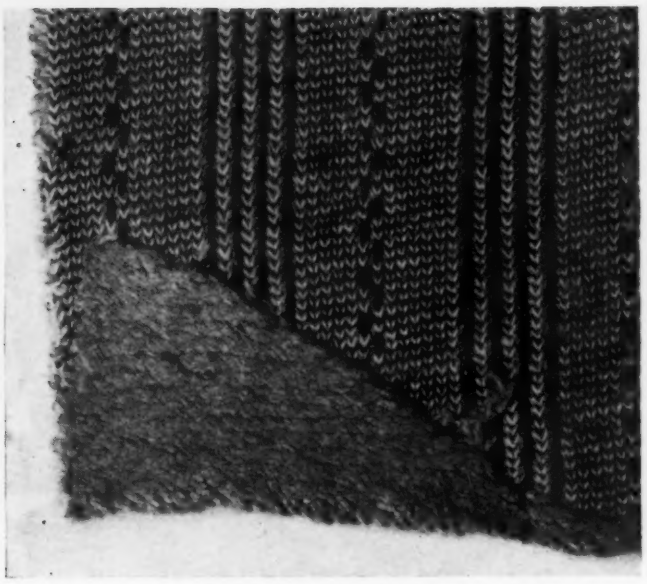
Spring-beard-needle machines which have leaded needles are most flexible for design or pattern knitting, as the number of needles may be increased or decreased to meet the requirements of the design.

Spring-needle machines equipped with cylinders of the trick type and having a slot for each needle are less flexible, as they contain a fixed number of needles. This puts them in the same class as latch-needle machines so far as changing of a design from one machine to another of different size is concerned.

Some of these machines turn to the right (that is, the needles immediately in front of the operator move to-



Vertical-diagonal design made on loop-wheel leaded-needle machine



Vertical-stripe design made on loop-wheel spring-needle machine

ward his right) while others turn toward the left. Whether or not the motion is "right hand," " left hand," "clockwise," or "counter-clockwise" is not important so long as the direction in which the *needles* are passing the stitch-forming mechanisms of the machine is known.

However, turning in either direction, loop-wheel spring-needle knitting machines possess these characteristics in common: The fabric is tubular; the fabric moves upward because the take-ups are above the knitting mechanism; and the face of the fabric is on the inside with the back showing on the outside in the knitting of designs and figures. With latch-needle machines, there are those in which the needle cylinder rotates and with it the take-up; and there are others in which the cam ring, yarn stand, and stop motion rotate, while the needle cylinder and take-up remain stationary. Whether one or the other rotates, however, it is the direction of motion or apparent direction of motion applied to the *needle* cylinder that must be considered in knitting designs.

If the cylinder and needles are rotating in such direction that the needles immediately in front of the operator are moving toward his right, the stitches are being formed in the same order of succession as on a loop-wheel spring-needle machine rotating in the same direction. If, however, the cam ring and yarn stand are rotating in such direction that the portion immediately in front of the operator is moving toward his right, then the cylinder and needles must be considered as rotating in the opposite direction. The stitches are then being formed in the same order of succession as on a loop-wheel, spring-needle machine turning toward the operator's left hand.

The take-up, however, being located below the knitting mechanism, the fabric moves downward as it leaves the needles; but, whether the cylinder and needles rotate or the cam ring and yarn stand rotate (regardless of direction of rotation), the fabric is tubular with the face outside and the back inside the tube as viewed on the machine.

If, on a sinker-top, latch-needle machine, the take-up were loosened and the fabric were drawn up from the inside and spread with the hands, it would present the same appearance as a fabric on a loop-wheel, spring-needle machine knitting the same design and with the needles moving in the same direction. The observer would be viewing the back of the fabric.

Having established an analogy between sinker-top or open-cylinder latch-needle machines and loop-wheel, spring-needle machines, an endeavor will be made to explain clearly the technic of designing new figures for machines on hand and of adapting to such machines designs that may come to hand from other sources.

In treating this subject it will be assumed that the knitter is familiar with the ordinary functions of the loop-wheel, spring-needle knitting machines, in the process of knitting plain fabrics, and that the terms "stationary presser" and "rotary" or "round presser" are known to him. The rotary or round presser is always used in the knitting of designs on loop-wheel, spring-needle machines. Prepared for design or "pattern" knitting, it is called a "cut-presser" and is usually used in combination with a "plain presser," either stationary or rotary, on alternate feeds. There are occasions, however, when cut pressers are used on all feeds, of which more will be said later.

Basis of Design Calculations

As the number of needles in the cylinder is the basis of all calculations for designs, whether originals or adaptations, such a number may be called the controlling factor, and a number of needles having a great number of divisors offers a simpler problem than a number having only a few divisors. This fact makes the flexibility of leaded-needle cylinders a decided advantage, as the addition or removal of a lead or two sometimes transforms a cylinder having a number of needles of which there are few divisors into one having many divisors.

Simply expressed, the process of knitting designs or figures into a fabric consists of causing needles in prearranged locations to draw or knit loops of yarn of a selected color in the proper course or row of stitches (sometimes called "round")—all of which is arranged and prepared for in the selection of the design and the adaptation of it to the machine on which it is to be knitted. The facility with which this is brought about depends upon the ease with which the number of needles in the cylinder may be divided into convenient groups.

The factors controlling the proper selection of needles to draw or knit loops and the courses in which to draw them are the number of feeds, the number of needles in the cylinder, and the facility with which the entire circumference and divisions of the presser will divide into it.

In the following instances and demonstrations, it is assumed that cylinder and presser alone are used and that the cylinder turns freely either way. Let us assume that we have a cylinder of any desired gauge containing 1,000 needles, and a round presser with 100 shallow cuts, called "prints," in its outer edge spaced to fit the gauge of the needles in the cylinder.

If such a presser, mounted on a stud, were placed in contact with the needles and the cylinder were rotated in either direction, the presser would rotate with it very much as a pinion rotates with a gear, the needles in the cylinder and the prints in the presser operating as gear teeth and serving to maintain their relative positions, which is very important.

Being much smaller than the cylinder, the presser would make several complete turns to one turn of the cylinder in exact proportion to their relative circumferences. In the instance mentioned (cylinder with 1,000 needles and presser with 100 prints) one turn of the cylinder in either direction would cause presser to make ten revolutions. If an index mark were put on the presser and a needle beard were broken off or definitely marked, it would be possible to demonstrate this truth.

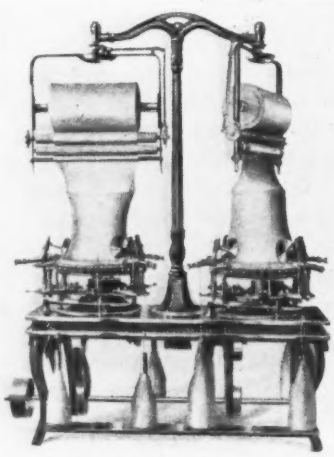
If, however, a needle were added to or taken from the cylinder, a displacement of the presser's position in relation to the marks would occur in each complete turn of the cylinder. If a needle were added to the cylinder (anywhere in the circle) and the marks were placed together, the effect of the direction of rotation would be very clearly demonstrated; and any cylinder with a presser dividing a whole number of times into the number of needles in any cylinder may be used to illustrate or demonstrate this. With the presser index point on the marked needle, rotate the cylinder so that the mark, in moving away from the presser, goes toward the right hand. Having added a needle, there are now 1,001 needles in the cylinder and the original 100 prints in the presser. At the completion of one turn of the cylinder it will be found that the index mark on the presser rests, not on the marked needle at which it started, but one needle to the right of its starting point. Rotation was toward the right.

Then, as the cylinder is assumed to be unhampered by equipment other than the presser and will move freely in either direction, place the index point of the presser again on the marked needle and again rotate the cylinder; but in the opposite direction, toward the left. At the completion of one revolution it will be found that the index point on the presser rests on a needle one removed from the marked needle and to the left of its starting point with direction of rotation toward the left, showing a gain or advance of one needle in each case.

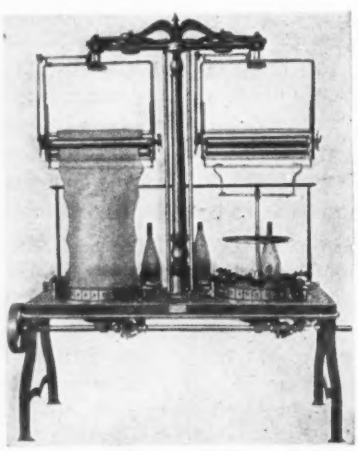
On the other hand, if a needle were taken out, leaving 999 needles in the cylinder, and the experiment repeated, it would be found that for a movement of the cylinder toward the right, the displacement of the index mark on the presser would be one needle to the left of the marked needle; and for a movement of the cylinder toward the left hand, the displacement of the presser would be one needle to the right of the marked needle.

It will thus be seen that the addition of needles causes the presser to gain on the cylinder in the direction of rotation, while a reduction in the number of needles causes the presser index point to move backward from its starting point in the opposite direction to that of the rotation of the cylinder.

The addition or removal of one needle causes an advance or retreat of the index point one needle for each turn of the cylinder, while the addition or removal of two needles would cause an advance or retreat, a gain or loss to the index point, of two needles for each revolution of the cylinder. Knowledge of the effect on the presser of a change in the number of needles is important, for it is upon the controlled advance or retreat, the gain or loss of position by the pressers, that the whole system of knitting designs by means of wheels or pressers has its basis.



Typical of machines adapted to cut-presser designing



In the foregoing description, a cylinder of needles with one presser as equipment was considered; but let us now suppose that there is added the necessary complete stitch-forming equipment of cloth-wheel, stitch-bur, landing wheel, and cast-off bur, and that same fabric is put on the needles, making one feed with the original 1,000 needles. One feed, working with the presser which has served to the present would produce a plain fabric as it would press all needles in each turn of the cylinder. If, at the index point, or at any other point in its circumference, one of the prints were deepened with a file so that a needle beard entering would not be pressed, there would be no knitting on that needle for that particular course, as the stitch would be held and a tuck, or material for a loop, added.

But as the presser divides evenly into 1,000 needles, the needle that entered the deep cut in the presser at the start not only would not knit, but at the completion of one turn the presser would leave its mark on nine other needles at regular intervals about the cylinder, all of which would be prevented from knitting and the cut in the presser would repeat on each one of them each revolution, causing them to "load up." Four or five turns of the cylinder may be made under such conditions with no harm to either needles or yarn, but it cannot go on indefinitely without something giving way. What is done depends upon what is required in the way of a design.

Sjostrom Back at Lawrence Dye Works *After 19 Years Absence*

BACK in 1899, Ivar L. Sjostrom, who had been graduated from the Massachusetts Institute of Technology as a civil engineer 11 years before, took over the management of the Lawrence Dye Works, Lawrence, Mass., which had been founded by his father, Ludwig, in 1884. Normally, such a story would close with the statement that after many years of successful operation the plant was sold to the United States Worsted Co., in 1913, and Mr. Sjostrom stepped out as manager and devoted himself to other textile interests. There is, however, a sequel to this story. The plant was put up at auction in the fall of 1931 and Mr. Sjostrom and his associates bought it back again through the medium of Lawrence Industries Corp. Recently operations have been started. Thus, after 19 years the plant returns to its old manager.

Not only did Mr. Sjostrom return himself, but he got in touch with Gusten Nordenstierna, superintendent of dyeing in the old days, and Otto Ruhlin, superintendent of finishing, and persuaded them to return with him. The plant will have, therefore, the same manufacturing executives as in its hey-day as a commission dyeing and finishing plant.

Fortunately equipment had been kept modern and by making a few additions Mr. Sjostrom now has a plant capable of handling wool in any form from raw stock through top and yarn to finished fabric, either woven or knit. The dyeing capacity is estimated at 500,000 lb. per week and the finishing capacity at 200,000 yd. In setup the plant consists of about one and one-half acres of ground upon which buildings averaging three floors are erected. Total boiler capacity is 2,200 hp., comprised of two 500 hp. boilers and eight of 150 hp. In addition 300 hp. of water power is secured from the Merrimack River which flows behind the plant. There is one 600 hp. engine and two generators.

Principal equipment consists of 58 dyeing machines, 22 washing machines, 14 fulling mills, 12 double shears, and all types of dryers to handle anything from raw stock through to piece goods. The plant is also fortunate in being equipped with nappers and a chinchilla machine so that the napped and pile fabrics now popular in women's wear can be handled. Illustration above shows interior view of the dyehouse.

The sales organization is in charge of William I. Fearing. A New York office is maintained at 234 West 39th St., with Adolph Hauptmann as representative, and two salesmen, in addition to Mr. Fearing, cover New England. Officers of the company, other than Mr. Sjostrom who is president and general manager, are Judge F. N. Chandler, the treasurer, and Mr. Fearing the sales manager.

While it is easy to play up the sentimental interest of the former manager returning after so many years, sentiment had no real place in the picture when the purchase was under consideration. The city of Lawrence was anxious to have the plant running and Mr. Sjostrom wanted to run it, but the possibilities of running it profitably were first carefully checked. Col. James F. Monaghan, a dyeing and finishing plant engineer, made a thorough survey of the plant from the standpoint of its physical equipment and position in the market. In addition, the sales possibilities were carefully gone over and only when both reports were favorable was it decided to open the plant.

Thus, the city of Lawrence has been saved an industry, workers have jobs, and the old regime has returned to power after 19 years. As for Ivar L. Sjostrom, he pulls his hat a little further down over his eyes, strides through the plant—and smiles.

15% Gain in Production *with Variable-Speed Spinning*

By C. L. Irwin
Reeves Pulley Co., Columbus, Ind.

◆ *The application of automatically controlled variable-speed drive to ring spinning and twisting, as described in detail on page 41 of the April 30 issue of* TEXTILE WORLD, *has created wide interest. In this paper, which was presented at the 33rd annual reunion of the Lowell Textile Institute Alumni in Lowell, Mass., on May 21, Mr. Irwin offers some interesting figures on the benefits derived from application of the new development to cotton spinning, as ascertained by mill tests. Besides the gain in production, there is a tangible improvement in yarn quality.*

IT HAS been definitely determined that by controlling the speed of the ring spinning frame as the rail changes its position and as the diameter of the bobbins increases, a uniform tension can be maintained on the yarn at all positions of the rail and diameters of the bobbin. When a ring spinning frame is run at a constant speed, the speed selected for a given size of yarn is at best a compromise. It must be slow enough not to stretch the yarn a great amount after it leaves the front rolls, or break down an undue number of ends when winding on the small diameter of the bobbin, yet fast enough to obtain reasonably high production. At this compromise speed the tension on the yarn varies considerably from empty to full bobbin. This, of course, places excessive tension on the yarn at small diameters of the bobbin and at certain positions of the ring rail, stretching it sufficiently at times to make it considerably under size and even breaking it in weak places. As the bobbin builds up in diameter, the tension on the yarn decreases and eventually reaches a point lower than it should be, resulting in oversized yarn.

Another detrimental effect of uneven yarn tension is uneven twist. As the tension becomes less, the friction of the traveler on the ring is reduced and it lags behind the spindle speed less than at the small diameters of the bobbin. Therefore the twists per inch become less.

As the strength and uniformity of the yarn are governed to a great extent by the twist, and the twist by the traveler speed, and the traveler speed by the tension, our problem becomes one of maintaining uniform tension on the yarn from empty bobbin to full bobbin. We have accomplished this by driving the frame with a variable-speed unit by which the speed is set at the correct revolutions of the front roll and spindle when the bobbin is empty and then automatically increased as the bobbin builds up in diameter and as the position of the ring rail changes.

At constant speed there is considerable variation in the tension between the front roll and guide wire. Tests conducted several years ago by textile engineers in Europe showed that with variable speed the tension between the front roll and guide wire remains constant and is approximately 10% less than the greatest pull or tension with constant speed. It is at this point, where there is but little if any twist in the yarn and it is weak, that the stretch takes place and most of the ends break.

Tension Between Traveler and Bobbin

By far the greatest variation in tension is between the traveler and the bobbin. The same test referred to above indicated that with constant speed the tension between the traveler and bobbin would at times increase 123% of the minimum tension, while with variable speed the tension would at no time increase more that 24% above the minimum. The change in tension at this point is caused by changing angles between the traveler and the point at which the yarn reaches the bobbin.

Variable speed is not used to reduce the yarn tension to the least tension occurring on the frame at constant speed, but to reduce it on the small diameter of the bobbin to the maximum stress which the yarn will stand. Then increasing the speed in proportion to the increase in diameters brings the lesser tension up to this point and keeps it uniform throughout the doff.

With variable speed we reduce the speed below the compromise speed that has been in use, to a speed which relieves the yarn tension sufficiently to minimize the breaking down of ends. This reduction usually amounts to from 5% to 1½%, depending upon the quality of the roving, condition of the frame, diameter of the bobbin, and other conditions that may be present in the mill.

Then as the bobbin increases in diameter and the angle between the traveler and bobbin changes, we gradually increase the revolutions of the cylinder, front roll, and spindles at the correct ratio to maintain a uniform tension on the yarn and thus produce a better quality of yarn. The speed is increased to 25% or 30% above the former constant speed.

Tests have indicated that after the bobbin is half full the tension does not change sufficiently to affect materially the uniformity or quality of the yarn. Therefore, the automatic control is adjusted to reach this maximum speed when the bobbin is half full and then automatically to cut out. The frame runs at a constant speed through the completion of the doff. This results in an increased production of about 15%.

Results of Tests

We shall give you the results of a few tests on frames equipped with the Reeves variable-speed spinning-frame drive and automatic control, which we consider about the average of what can be obtained.

A Whitin frame that has been in use since about 1900, spinning 34½ yarn from ⅞-in. cotton with 8/0 traveler, had been running at a constant cylinder speed of 1,150 and front-roll speed of 98, with a time between doffs of 8 hours. We ran a doff at this constant speed. We then ran a doff with the variable speed, starting the cylinder at 1,100 r.p.m., gradually increasing to a cylinder speed of 1,350 and front-

roll speed of 118 when the bobbins were half full, maintaining that speed to the completion of the doff. Doffing time was 6 hours 20 minutes, or an increased production of 14.7%. On each doff eight bobbins were chalk-marked at $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and full, these bobbins being taken from the same spindles on each doff. Two reelings were taken from each bobbin at each chalk mark and placed in the conditioning room to assure the same moisture content. The average yarn size at constant speed was 35.35; and at variable speed, 34.9. The average breaking strength at constant speed was 48.7 lb.; at variable speed, 50.1 lb.

Another test was made on a Saco water-power frame in use since 1890. The yarn size was 14; the cotton, $\frac{7}{8}$ in.; and the traveler, No. 5. At constant speed the cylinder ran at 1,000 r.p.m. and the front roll at 146. The time for doff was 3 hours. With the variable speed we started the cylinder at 1,000 and the front roll at 146, increasing the speed to 1,250 on the cylinder and 160 on the front roll when the bobbins were half full. Constant speed was employed from that time to full bobbin. Time for doff was 2 hours 25 minutes, an increase of 19% in production. With constant speed the average yarn size was 13.89; with variable speed, 13.76. Breaking strength at constant speed was 125.3; and at variable speed, 133.9.

Another test was made on the same frame spinning 18s yarn, as follows: 3/0 traveler; starting speed of cylinder, 975; front roll, 116; increasing to cylinder speed of 1,250 revolutions and front roll speed of 144. This reduced the doffing time from 4 hours 10 minutes with constant speed to 3 hours 30 minutes with variable speed. The average yarn size was 18.81; and breaking strength, 81.1—with an increased production of 16%.

At this mill we had a demonstration of the time saving when yarn sizes are changed. Instructions came to change all frames in one section to another size of yarn. The one with the automatic speed control was reset and in operation in a few minutes. Two men started changing the others, which were equipped with chain drives. By the time they had the third frame started there was a doff made on the frame with automatic control. While these drives may have been more difficult to change than the average, it affords an apt illustration of the value of being able to adjust them instantly by turning a handwheel.

On a Saco-Lowell long-draft frame of late model with filling wind and 7-in. bobbin, spinning 16s yarn from $1\frac{1}{8}$-in. cotton, a mill had been running the cylinder at 1,100 r.p.m. constant speed. I do not have the front-roll speed. At this speed, 70% of the ends broke down when winding on the lower end of the bobbin. With the variable speed, we reduced the cylinder to 930 at the start, or winding on the lower end of the bobbin, and gradually increased it to 1,240 r.p.m. at the center of bobbin, with the result that not an end broke down on the lower end of the bobbin and only 11 on the entire doff, as against an average of over 40 with constant speed. The increase in production was 15%. The average yarn size at constant speed was 16.06, and the average breaking strength was $116\frac{1}{2}$ lb. The average yarn size with variable speed was 15.65; and average breaking strength, 131.5.

Tests have been made on a Whitin frame with combination wind, and Saco-Lowell frame with 3-in. rings, bobbins $1\frac{3}{4}$ in. in diameter and 9 in. long, filling wind, but I do not have tabulations of these results. However, they are approximately the same as those given above. The one with 3-in. rings and long bobbins would be of especial interest from the standpoint of larger packages. Details were: yarn size, 23; No. 10 traveler; cylinder speed at start, 1,025 r.p.m.; front roll, 100; spindle speed, 6,000. The automatic control was set to increase this to 1,250 r.p.m. on the cylinder, 125 on the front roll, and 7,300 on the spindle when the bobbin was half full. These speeds were maintained constant to the completion of the doff.

Condition of the frames and many other things govern the amount of speed change that will give the best result. We have tried different sizes of travelers and found that the same size that was used for constant speed is satisfactory with variable speed and that it will last as long as, or longer than, with constant speed.

We have developed variable-speed spinning from the standpoint of improved yarns rather than from that of increased production, but increased production is the natural result of the speed regulation which improves the yarn quality.

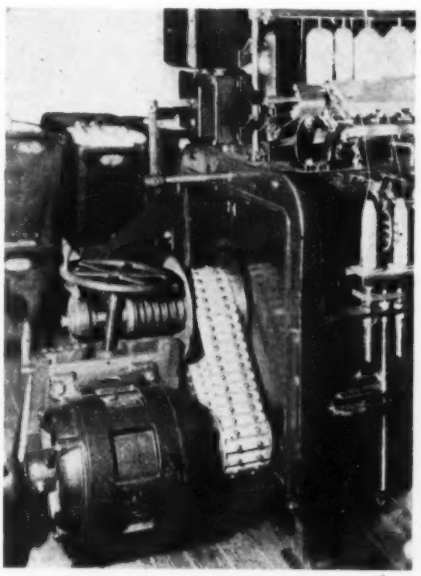
Lighter Traveler Possible

Our tests have all been conducted on frames in production, and we have not spoiled a single bobbin of yarn. It might be that experiment would show that lighter travelers could be used for a given size of yarn and the frames run at higher speeds.

There are other benefits to be derived from variable-speed spinning. Larger packages can be made. Smaller bobbins can be used and the speed adjusted accordingly at the start of the doff. However, greater advantage can be gained by having larger rings, because one course of yarn at the large diameter contains several times as much yarn as one course at the small diameter. When changing yarn sizes, the speed can be set in a few minutes by turning a handwheel and setting the limit screws for the desired maximum and minimum limits of speed. When a poor quality of roving is supplied, the speed may be adjusted to suit with no loss of production. Also we obtain more uniformly wound bobbins and a firm package, minimum breakage of ends, and lower labor costs.

We are now providing an automatic control for filling wind, with an oscillating action which will operate from the builder-motion cam to increase the speed as the yarn winds from the empty to the full bobbin and decrease the speed on the opposite traverse. However, the same control used on the warp wind shows just as great improvement in filling-wind yarns as in warp-wind, as will be noted from the third test mentioned above.

We have equipped twisters with this automatic control and produced more uniform twisting and elasticity, with as much or greater increase in production than on the spinning frame. I can see no reason why variable-speed control of a ring frame on woolen and worsted yarns would not give the same advantageous results as on cotton yarns.



Variable speed drive operating long-draft spinning frame

Four Technical Sessions at Lowell Alumni Reunion

A DISCUSSION of variable-speed transmissions for spinning and an analysis of loom operation by means of slow-motion pictures featured the annual reunion of the Lowell Textile Institute Alumni Association at Lowell, Mass., last Saturday. Also of particular interest was the advance report of a thesis comparing the mule and ring methods of woolen spinning prepared by an undergraduate and presented at one of the four technical sessions held simultaneously in various classrooms. Other activities included a lunch in Southwick Hall and attendance at a baseball game between the institute and the University of New Hampshire, which Lowell won 3 to 2. Fraternity banquets were held in the evening, and at one of them an interesting paper comparing group and individual drives was presented.

A. J. Midwood, President

At the business meeting in the morning, which was presided over by Charles H. Forsaith, '20, superintendent of the Jackson Mills, Nashua, N. H., and president of the association, the following officers were elected for the ensuing year: president, Arnold J. Midwood, '05, Dyestuffs Corp. of America, Boston; vice-president, Walker F. Prescott, '09, manager of Prescott & Co., Montreal, Canada; and secretary-treasurer, Arthur A. Stewart, '00, professor of textiles at the institute.

After lunch the alumni were addressed by Charles H. Eames, president of the institute, who announced that the enrollment of undergraduates is keeping up well in spite of poor business conditions. He stated that a number of new machines have recently been installed at the institute, including a Reading full-fashioned hosiery machine, a Davis & Furber woolen ring spinning frame, and two Rice, Barton & Fales printing machines.

The slow-motion picture on loom operation was presented through the courtesy of the Crompton & Knowles Loom Works, Worcester, Mass., and was accompanied by a lecture by Albert Palmer, research assistant to the general manager of that accompany. The picture disclosed many facts about weaving mechanism previously unknown. Mr. Palmer stated that the study has already lead to improvements in loom design, including a scientifically constructed picking shoe. An analysis of the picture, he said, disclosed that, due to the flexibility of the picker stick, the shuttle normally travels about a third of the distance it has been supposed to travel during the early part of the sweep.

The lecture on variable-speed spinning was presented during the cotton technical session by C. L. Irwin, of Reeves Pulley Co., Columbus, Ind., and is published elsewhere in this issue. The demonstration which accompanied the lecture was in charge of D. W. Clem, of the Boston office of the same company. Also presented at the cotton session was the report of a thesis entitled "Effect of Various Staples on the Strength Twist Curve," by E. Z. Yung, '32. B. W. Parsons, '20, treasurer of Lewiston Bleachery & Dye Works, Boston, was chairman of this group.

Mule Versus Ring

The thesis on mule- and ring-spun woolen yarns was the work of Henry Sawyer, '32, and was presented during the engineering session, which was in charge of Alexander Campbell, '23, Charles T. Main, Inc., Boston. Mr. Sawyer stated that, although work on the thesis is not entirely completed, the results thus far developed indicate that the strength of the two yarns is about the same but that yarn uniformity is in favor of the ring frame. Strength tests on fabrics made from the two yarns indicated no choice between them. Napping tests failed to disclose that fabrics made from ring-spun yarns are more subject to damage, as has been contended.

Also included in the engineering hour was a lecture on mill lighting units by A. E. Wells, '20, assistant professor of mechanical engineering at the institute; and a thesis entitled "Study of Walen Evenness Tester," by H. W. Russell, '32.

The session on wool, under the chairmanship of S. H. Wheelock, '05, president of Stanley Woolen Co., Uxbridge, Mass., and that on chemistry, under C. L. Howarth, '17, assistant professor of dyeing at the institute, were both featured by spirited discussions on economic conditions in their respective fields. At the wool meeting a talk was given on "Wool and Kindred Fibers," by A. L. Sprague, Uxbridge (Mass.) Worsted Co.; and one on "New Wool-Finishing Machinery," by H. C. Riggs, '17, of Riggs & Lombard, Lowell. Talks at the chemistry session included "Research Work of Textile Chemists and Colorists," by Dr. L. A. Olney, head of the chemistry and coloring department of the institute; "Observations on Cloth Carbonizing," by H. W. Leitch, '14, superintendent of dyeing and finishing at Pacific Mills, Lawrence, Mass.; and "The Rayon Situation," by A. K. Johnson, '13, recently of Cheney Bros., South Manchester, Conn.

Banquets were held in the evening by the Delta Kappa Phi and Omicron Pi Fraternities. The latter celebrated its thirtieth annual reunion and had as guest speaker F. H. Willard, president of Graton & Knight Co., Worcester, Mass. Mr. Willard discussed group and individual drives for industrial plants and quoted impressive figures, recently collected, showing that the group drive is the more economical. The large attendance at both the general alumni activities and the reunion of the Omicron Pi Fraternity broke all records.

Rayon Industry
May Shut Down
All Viscose Process Plants

THE rayon industry is determined to prevent stock accumulation during the warm weather lull, even if this necessitates a complete shutdown of plants. Such was the construction placed this week by trade leaders on the decision of the Viscose Co., closely followed by the DuPont Rayon Co., and the Delaware Rayon Co., to close all their viscose process units for the month of June, or longer. Considering the new spirit of strong cooperation among rayon companies, and the general trend to curtailment which has been evident for some months, it is assumed that other leading firms will adopt a similar policy.

The Viscose Co., being the largest producer of viscose process yarn in the country, serves as a powerful leader in the new step. However, the feeling which prompted this firm's action is shared by the rest of the firms making that yarn. Sales of viscose yarn have declined steadily, month by month, and prospects point to exceptionally quiet business during June. At present, viscose yarn companies have two to three months' supply on hand. Production was slightly over 45% of capacity in the major plants last week, and producers now are pretty well decided that continued operation at this rate, or lower, would be more costly than a shutdown.

The Viscose Co. decision affects a total of 20,000 workers in plants at Marcus Hook, Pa., Lewiston, Pa., Roanoke, Va., and Parkersburg, W. Va. It is not believed that the shutdown will present a serious personnel problem since, assuming it does not last longer than a month, it will mean nothing more than an enforced vacation to the employes. Other producers who expect to take similar action expressed confidence this week in being able to hold their organizations substantially intact. It is understood that effort will be made to crowd all possible maintenance work into the shutdown period, thus giving work to a skeleton staff. The cessation of spinning, which of course is the aim of the shutdown will mean temporary idleness for many thousands, but industry leaders expect that most of these can be reassembled without difficulty four weeks later; most of the workers it is contended, have enough money saved to tide them over the shutdown period, and would not be disposed to seek other jobs, even if such were available.

The shutdown decision was viewed in the industry as the happiest news of the year. Producers appear to be virtually unanimous in approving and planning to emulate the step. The president of another important rayon company which was busy this week on tentative arrangements for similar action, offered the following comment: "It is simply a question of whether we should do the drastic thing and immediately solve our problem, or rely upon the slower method of curtailment which would mean a proportionately slower recovery."

The main point is that the industry is definitely determined not to repeat its errors of 1930; memories of that year, with all its cut-throat underselling, and hectic overproduction, are still vivid in the minds of the producers, and they recognize that during recent months conditions have been pointing in the same direction. It is a signal tribute to the management of the industry, however, that despite a sharp and persistent slump in sales since early spring, prices have held firm.

There is a strong conviction among producers that next fall will be good, and they do not want to spoil the prospects by entering the season with a surplus which would necessarily weaken the market. It is not expected that the shutdown will extend to acetate, nitrocellulose and cuprammonium process yarns, since the competitive problem in these divisions is much less acute.

Discussing this phase, officials of the Viscose Co. pointed out that they have been holding down sharply on production of acetate yarns, which total is small at best. The total monthy output of this company is about 6,000,000 lb. As Viscose represents nearly 50% of synthetic fiber production in the country, this would mean that a June shutdown of all the viscose process plants in the industry would eliminate nearly 11,000,000 lb.

If the probability of radical curtailment throughout the viscose process branch of the synthetic fiber industry materializes, the step will indicate that yarn producers intend to benefit by the *controllable* nature of their field. It has long been argued that the output of man-made fibers, which are not susceptible to the vagaries of nature, can be regulated and stabilized at the will of the manufacturers. Such control has not always been exercised in the past. During recent months, a new spirit of cooperation and of determination has been noted in the industry. The application of this spirit now may avert a recurrence of the sad story of 1930. The temporary effect upon employees, during summer months, would be negligible compared with the eventual effect of a demoralized industry.—*Editor.*

Yarn Diameter *and* Fabric Construction

By T. Woodhouse, F.T.I., and A. Brand, A.T.I.

◆ *In the various articles on cloth structure that have appeared in* TEXTILE WORLD *by the above writers*, brief acknowledgment has been made of the general debt of gratitude due to the late Thomas R. Ashenhurst of Bradford, Yorkshire, for the pioneer work in connection with the subject matter of this article. It is quite in the nature of things, of course, to expect modifications and developments of the results obtained in any branch of research; and the authors are glad to acknowledge the inspiration of the original work by Mr. Ashenhurst. It is now proposed to deal briefly in this supplementary article with the calculations regarding the relative diameters of yarns and their application to the setting of fabrics.*

IN comparing the relative diameters of yarns it is necessary first of all to take account of the two different systems into which the methods of determining the counts of yarns may be broadly classified; i.e., the fixed-weight system and the fixed-length system. In the former system it will be realized that the yarn becomes thinner (smaller in diameter) as the count number increases; while, in the latter system the reverse is true. In studying the rules deduced, therefore, it is necessary to keep clearly in mind the particular system by which the count of the yarn has been determined.

Although the cross-section of a yarn could not, technically, be considered that of a true circle, for comparative purposes such an assumption is not out of order. Hence, we may formulate an expression for the area A of a yarn of diameter d as follows:

$$A = \frac{\pi d^2}{4} = .7854\, d^2$$

Since the value .7854 is a constant, we may use the expression, $A \propto d^2$; i.e., the cross-sectional area varies as the square of the diameter. This being true, it follows that the diameter of a yarn varies as the square root of the cross-sectional area.

Little consideration is needed to show that the count of a yarn varies as the area of the cross-section. If the sectional area is doubled, the yarn weighs exactly twice as much per unit length; and the count is varied to correspond to the system in which the count is expressed. This may be expressed symbolically as follows: assuming that C represents the count of the yarn, $C \propto A$. Hence, $\sqrt{C} \propto \sqrt{A}$. It is shown above that $d \propto \sqrt{A}$. Therefore $d \propto \sqrt{C}$.

When the count system possesses a fixed length and a variable weight—as, for example, the woolen grain system or the jute system (in the latter case the count is expressed in a variable number of pounds per "spyndle," a unit of 14,400 yd.)—the diameter of the yarn varies directly as the square root of the count: i.e., $d \propto \sqrt{C}$.

However, when the count system possesses a fixed weight and a variable length—as, for example, the cotton system—the diameter of the yarn varies inversely as the square root of the count:

$$d \propto \frac{1}{\sqrt{C}}$$

To take a concrete example, let us suppose it is desired to compare the relative diameters of 9-, 16-, and 25-lb. per-spyndle jute yarn. The proportional or relative diameters may be expressed as follows:

Diameter of 9-lb. yarn	Diameter of 16-lb. yarn	Diameter of 25-lb. yarn
$\sqrt{9}$	$\sqrt{16}$	$\sqrt{25}$
3	4	5

or

The relative (not actual) diameters of the above three yarns are therefore in the proportion of 3 : 4 : 5.

On the other hand, suppose it is desired to compare the relative diameters of 9s, 16s, and 25s cotton yarn. This is done as follows:

$$\frac{1}{\sqrt{9}} : \frac{1}{\sqrt{16}} : \frac{1}{\sqrt{25}}$$

or

$$\frac{1}{3} : \frac{1}{4} : \frac{1}{5}$$

It therefore follows that if the diameter of one count of any kind of yarn could be accurately determined, a simple calculation would enable the diameter of any other count of the same kind of yarn to be determined. Suppose, for example, that an accurate determination of the diameter of 9-lb.-per-spyndle jute yarn shows the diameter to be 1/40 in.; then the diameter of a 16-lb.-per-spyndle yarn of a corresponding type is greater than 1/40 in. in the proportion of $\sqrt{16}$ to $\sqrt{9}$. That is to say:

$$\frac{1}{40} \times \frac{\sqrt{16}}{\sqrt{9}} = \frac{1}{30} \text{ in.}$$

When dealing with yarns counted in the fixed-weight, variable-length system, such as the cotton and several other systems, a different method prevails. Suppose that an accurate determination of the diameter of a 9s cotton yarn shows it to be 1/96 in.; then the diameter of a 16s cotton yarn of similar type will be less than 1/96 in. in the proportion of $\sqrt{9}$ to $\sqrt{16}$. Thus:

$$\frac{1}{96} \times \frac{\sqrt{9}}{\sqrt{16}} = \frac{1}{128} \text{ in.}$$

The above calculations are all of a very simple type, because the counts chosen are such that the square root can be obtained by inspection. When dealing with counts of which the square roots are not easily evaluated, it is better to adopt the following procedure:

Suppose the diameter of 8-cut woolen yarn is determined to be 1/60 in.; what is the diameter of a number 4-cut yarn?

The diameters of these yarns vary inversely as the

*All summarized in the last two articles, published March 28 and July 18, 1931.

square roots of their counts. Therefore, if, in the following, C is the count of the thicker yarn, D is the diameter of the thicker yarn, c is the count of the thinner yarn, and d is the diameter of the thinner yarn, then,

$$\frac{1}{\sqrt{C}} : \frac{1}{\sqrt{c}} = D : d$$

$$\frac{1}{C} : \frac{1}{c} = D^2 : d^2$$

or

$$\frac{1}{4} : \frac{1}{8} = D^2 : \left(\frac{1}{60}\right)^2$$

Therefore,

$$D^2 = \frac{1}{4} \times \frac{8}{1} \times \left(\frac{1}{60}\right)^2$$

$$= \frac{1}{1800}$$

$$D = \frac{1}{42} \text{ in.}$$

In the case of jute yarns or yarns of any other similar system (e.g., the woolen grain system) the procedure is a little different. The yarns in these fixed-length, variable-weight systems, are characterized by increasing diameters for increasing count numbers, and the method adopted may be shown by the following in relation to jute counts:

Suppose that the diameter of 8-lb.-per-spyndle jute yarn is found to be 1/40 in.; what is the diameter of a similar kind of yarn weighing 24 lb. per spyndle?

Using the same letters as in the preceding example:

$$\sqrt{C} : \sqrt{c} = D : d$$

$$\sqrt{24} : \sqrt{8} = D : \frac{1}{42}$$

whence:

$$D = \frac{1}{42} \times \frac{\sqrt{24}}{\sqrt{8}} = \frac{1}{24} \text{ in.}$$

Note: It may simplify the evaluation of the equation to square both sides at the outset.

It should be emphasized that the above comparisons are of value only when considering *similar* yarns. That is to say, the yarns must be of the same type and quality, and with proportionate numbers of turns per inch. It must be obvious that imperfect results would be obtained by the above methods if a softly twisted 8s cotton filling were compared with an 80s crepe-twist cotton warp.

Determining Set of Fabrics

The above principle of comparing the relative diameters of yarns can be used to advantage in the determination of the sets of similar fabrics, since it is easy to show that the maximum number of threads that can be laid side by side in the space of one inch is the reciprocal of the diameter of the yarn. If a given yarn is 1/100 in. in diameter, 100 threads could be laid side by side in one inch. Hence, if experience shows that a suitable fabric of a given kind is made with 40 threads per inch of 16s cotton, the number of threads per inch in a *similar* fabric made from 64s cotton is calculated as follows:

Since 64s cotton is finer (thinner) than 16s cotton, there will be more threads per inch in the new fabric than in the original fabric in the proportion of $\sqrt{64}$ to $\sqrt{16}$; i.e., in direct proportion to the square root of the counts. Hence,

$$40 = \frac{\sqrt{64}}{\sqrt{16}} = 80 \text{ threads per inch}$$

The corresponding method in the case of a jute fabric would be as follows: Suppose that a fabric entirely suitable for its purpose is woven with 20 threads per inch of 8-lb.-per-spyndle yarn, what number of threads per inch should be used for the production of a similar fabric with 14-lb. warp?

Now 14-lb. yarn is coarser than 8-lb.; hence the original number of threads per inch must be decreased in proportion to the diameters of the yarns; i.e., in proportion to the square roots of the two different counts of yarns. Thus:

$$20 \times \frac{\sqrt{8}}{\sqrt{14}} = 15 \text{ threads per inch in new fabric}$$

Since the number of threads per inch in the warp is a direct derivative of the set of the reed and the number of threads per dent, it follows that the same principle of proportional counts may be applied to the determination of sets or porters, if the number of threads per dent remains constant. For example, if a satisfactory cloth is produced with 35s cotton in a 60-set, Blackburn reed, what count of yarn should be employed in an 80-set reed to make a similar but finer fabric?

The 80-set reed contains more dents per inch than the

TABLE I

Cotton:	$\frac{900 \text{ yd. per lb.}}{840 \text{ yd. per hank}} = 1.0714$
Spun Silk:	$\frac{900 \text{ yd. per lb.}}{840 \text{ yd. per hank}} = 1.9714$
Woolen Yorkshire Skein:	$\frac{900 \text{ yd. per lb.}}{256 \text{ yd. per skein}} = 3.5156$
Woolen, Run:	$\frac{900 \text{ yd. per lb.}}{1600 \text{ yd. per run}} = 0.5625$
Woolen, Cut:	$\frac{900 \text{ yd. per lb}}{300 \text{ yd. per cut}} = 3.000$
Worsted:	$\frac{900 \text{ yd. per lb.}}{560 \text{ yd. per hank}} = 1.6071$
Linen:	$\frac{900 \text{ yd. per lb.}}{300 \text{ yd. per lea}} = 3.000$

TABLE II

Cotton	$= 1.0714 \times \frac{0.40}{0.48} = 0.8928$
Spun Silk	$= 1.0714 \times \frac{0.53}{0.48} = 1.1830$
Woolen, Yorkshire Skein	$= 3.5156 \times \frac{0.30}{0.48} = 2.1973$
Woolen Run	$= 0.5625 \times \frac{0.30}{0.48} = 0.3516$
Woolen Cut	$= 3.0000 \times \frac{0.30}{0.48} = 1.8750$
Worsted	$= 1.6071 \times \frac{0.56}{0.48} = 1.8750$
Linen	$= 3.0000 \times \frac{0.54}{0.48} = 3.3750$

60-set reed. Hence the yarn will be finer, and its count must be higher. Hence:

$$60 \text{ set} : 80 \text{ set} = \sqrt{35} : \sqrt{C}$$
$$60^2 : 80^2 = 35 : C$$
$$C = \frac{80^2 \times 35}{60^2} = 62.2\text{s cotton}$$

Because the number of threads per inch is a function of the set of the reed and the threads per dent, it follows that if the latter factor remains constant, the principle is applicable irrespective of the system of counting reeds which happens to be employed. Thus, in the jute industry, reeds are counted on the porter system, in which the porter of the reed is expressed by the number of porters of 20 dents each contained in 37 in. (A complete description of the various methods of counting reeds appears in "Healds and Reeds for Weaving: Setts and Porters," by T. Woodhouse.) If a satisfactory plain jute cloth (hessian) is woven with an 8-lb. warp in a 12-porter reed, what porter should be used in the weaving of a similar hessian fabric from 10-lb. warp?

The new warp is heavier (thicker) than the original. Hence a coarser reed (smaller porter) will be necessary; and the porter will be less than the original in proportion to the yarn diameters; i.e., in proportion to the square roots of the counts. Thus:

$$\text{New porter} = 12 \times \frac{\sqrt{8}}{\sqrt{10}} = 10.7, \text{ or an 11-porter reed}$$

As a final example, suppose that a satisfactory woolen fabric is made from 2½-run yarn in a 10s reed, four threads per dent; what reed would be suitable for a similar fabric made from 4-run yarn?

The new yarn is thinner than the original; hence a finer reed would be employed. If the threads per dent remain unchanged, the new reed will be as follows:

$$\text{New reed} = 10 \times \frac{\sqrt{4}}{\sqrt{2.5}} = 12.6 = 13 \text{ reed}$$

Equivalent Diametral Count

In previous articles on this subject, the specific gravity of several kinds of yarn was found; but it would clearly involve a considerable amount of work to calculate all the different kinds, and probably an almost equally satisfactory result would be obtained by calculating one kind, and deducing the remainder. Indeed it has been found by the joint application of theory and practice (see "The Diameters of Yarns and the Structure of Fabrics," by T. Woodhouse, *Textile Mercury*, Oct. 25, 1919, to Feb. 5, 1921) that a perfectly balanced plain cloth can be made from any size of yarn, and from any of the more commonly used fibrous materials, by utilizing carefully determined values, after consideration of the physical effects due to the operation of weaving, as well as the different specific gravities of the various types of yarn made from the above-mentioned fibrous materials.

Most of the experiments in connection with this particular part of the work were conducted in the textile department of the Dundee Technical College and School of Art several years ago, and it is natural to expect that jute yarns—being thick, strong, and easily obtainable—were used in the experiments; although at a rather later date the data were confirmed by similar experiments made with cotton yarns. Consequently, the results obtained are easily translated for use with yarns made from fibers other than jute and cotton, since it is a simple matter to obtain the equivalent counts, say of the jute yarns, in all the other systems. For example, in the jute counts a 16-lb.-per-spyndle yarn is one that contains 16 lb. per spyndle of 14,400 yd., whence it follows that in this size of yarn there are:

$$\frac{14{,}400 \text{ yards}}{16 \text{ lb.}} = 900 \text{ yd. per lb.}$$

Using this result as a basis, the values corresponding to a No. 1 yarn in various other systems can be calculated as shown in Table I.

Those yarns in which the conditional density is greater than that of jute will naturally appear smaller or thinner than the corresponding jute yarn, and vice versa; but since in all the above seven systems the count of the yarn increases as the cross-sectional area decreases, the equivalent diametral count, or the count bearing direct relation to the working diameter, could be obtained as follows:

$$\frac{\text{Equivalent count} \times \text{conditional density of yarn}}{\text{Conditional density of jute yarn}} = \text{Equivalent diametral count.}$$

Hence, values for the above-mentioned seven different yarns are obtained as in Table II.

In the equation deduced from the weaving experiments with jute yarns, it was found that the working diameters of jute yarns are equal to the following:

$$\text{Diameter of jute yarns} = \frac{\sqrt{C}}{120}$$

C = the count of the yarn in pounds per spyndle of 14,400 yards. Hence, the working diameter of 16-lb.-per-spyndle jute yarn is:

$$\frac{\sqrt{16}}{120} = \frac{4}{120} = \frac{1}{30} \text{ in.}$$

But, whereas the diameters of jute yarns are directly proportional to the square root of the count expressed as above, the diameters of the yarns in the other seven systems are inversely proportional to the square root.

For all the seven equivalent diametral counts given above, however, the working diameter of the yarn is 1/30 in.; hence, in the formula expressing the working

TABLE III

Name of Fibrous Yarn	Basis of Yarn Counts	Working Diameter of Yarn
Cotton.....	Number of hanks of 840 yd. each in 1 lb.....	$\frac{1}{32\sqrt{\text{Count}}}$
Spun Silk...	Number of hanks of 840 yd. each in 1 lb.....	$\frac{1}{28\sqrt{\text{Count}}}$
Woolen Yorkshire Skein.....	Number of skeins of 256 yd. each in 1 lb.....	$\frac{1}{20\sqrt{\text{Count}}}$
Woolen Run	Number of runs of 1600 yd. each in 1 lb.....	$\frac{1}{51\sqrt{\text{Count}}}$
Woolen Cut	Number of cuts of 300 yd. each in 1 lb.....	$\frac{1}{22\sqrt{\text{Count}}}$
Worsted....	Number of hanks of 560 yd. each in 1 lb.....	$\frac{1}{22\sqrt{\text{Count}}}$
Linen.....	Number of leas of 300 yd. each in 1 lb.....	$\frac{1}{16\sqrt{\text{Count}}}$
Jute.....	Weight in pounds of a spyndle of 14,400 yd. (48 cuts of 300 yd. each).....	$\frac{\sqrt{\text{Count}}}{120}$

diameter of the yarn, the constant of 120 for jute will be replaced by a different value in each system. These various constants may be calculated in the following way:

Cotton: Let x = required constant; then:

$$\frac{1}{x\sqrt{0.8928}} = \frac{1}{30} \text{ in. for cotton}$$

Hence,

$$x = \frac{30}{\sqrt{0.8928}} = 31.91; \text{ say, } 32$$

By substituting in succession for the factor 0.8928 in the cotton example, the values 1.1830, 2.1973, 0.3516, 1.8750, 1.8750, and 3.3750, the corresponding constants applicable to spun silk, woolen skein (Yorkshire), woolen run, woolen cut, worsted, and linen may be found. All the results obtained, including that for jute, appear in Table III.

It is an interesting coincidence that the values for the woolen cut system and the worsted system are identical.

It will be understood that in all the foregoing examples the preservation of the balance of the structure of the fabric (no matter what the type of structure may be) necessitates corresponding similar changes in the filling for perfectly balanced two-layer plain cloths, and suitable changes in the counts and number of picks per inch in three-layer and multiple-layer cloths. Moreover, the same principles are applicable to all the different methods of counting yarns in the two distinct systems—fixed weight, variable length; and fixed length, variable weight. It might also be pointed out that it is possible to compare the diameters of yarns expressed in different systems of counting by reducing them all to some convenient denominator—e.g. yards per pound, as shown in the foregoing examples—provided the different specific gravities or conditional densities of the yarns are taken into consideration; otherwise, great differences will be encountered. It is also possible to compare different systems of reed counting by reducing them to some common denominator, such as the number of dents per inch.

In dealing with actual maximum fabrics, it is suggested that the best method in any particular case is to make use of the data given in previous articles on the subject by the same authors in TEXTILE WORLD. That is to say, find the average space occupied by each thread of the warp (or filling) in relation to the diameter of the yarn. For fabrics other than maximum ones, the methods discussed in this article should be used, because in these cases the structures are relative ones, not maximum ones.

Since it is absolutely essential that the different conditional densities of the various kinds of yarns should be taken into consideration, Table IV has been prepared to facilitate the work. This table gives the reciprocals of all counts from 1s to 100s in seven different systems (two systems appearing in column four because the worsted and woolen cut systems possess the same value).

It will be noticed that there is no column for the woolen run system. The reason for this omission is the fact that the bulk of these yarns are between counts 1 and 6, moving up in stages of $\frac{1}{8}$ run or thereabouts; consequently, a scheme of counts involving Nos. 1 to 100 would be practically valueless. Similarly, the columns for worsted and woolen exhibit counts that are rarely, if ever, approached; whereas the column for jute could omit counts 1 and 2, but might include counts very much higher than 100.

For the benefit of those persons interested particularly in the woolen run system, the reciprocal of any count, whole or mixed numbers, can be ascertained by the following equation:

$$\text{Reciprocal of yarn diameter} = 51\sqrt{\text{Run}}$$

All the articles on the subject of yarn diameters and the structure of fabrics, as well as some additional manuscript, are to be re-published in book form shortly by Macmillan & Co., Ltd., London.

TABLE IV

Count Number	Cotton	Silk	Worsted and Woolen Cut	Woolen Y. S.	Linen	Jute
1	32.00	28.00	22.00	20.00	16.00	120.00
2	45.25	39.59	31.11	28.28	22.62	84.47
3	55.42	48.50	38.10	34.64	27.71	69.28
4	64.00	56.00	44.00	40.00	32.00	60.00
5	71.55	62.61	49.19	44.72	35.78	53.67
6	78.38	68.59	53.89	48.99	39.19	48.99
7	84.67	74.09	58.21	52.92	42.37	45.35
8	90.50	79.18	62.22	56.56	45.25	42.43
9	96.00	84.00	66.00	60.00	48.00	40.00
10	101.18	88.54	69.56	63.24	50.59	37.95
11	106.14	92.88	72.97	66.34	53.07	36.18
12	110.85	96.99	76.21	69.28	55.42	34.64
13	115.39	100.97	79.33	72.12	57.70	33.28
14	119.78	104.78	82.32	74.84	59.87	32.07
15	123.94	108.44	85.21	77.46	61.97	30.98
16	128.00	112.00	88.00	80.00	64.00	30.00
17	131.94	115.44	90.71	82.46	65.97	29.11
18	135.78	118.80	93.35	84.86	67.89	28.28
19	139.49	122.05	95.90	87.18	69.74	27.53
20	143.10	125.22	98.38	89.44	71.55	26.83
21	146.66	128.32	100.83	91.66	73.33	26.18
22	150.08	131.32	103.18	93.80	75.04	25.59
23	153.47	134.29	105.51	95.92	76.74	25.02
24	156.77	137.17	107.78	97.98	78.38	24.49
25	160.00	140.00	110.00	100.00	80.00	24.00
26	163.17	142.77	112.18	101.98	81.58	23.53
27	166.27	145.49	114.31	103.92	83.14	23.09
28	169.34	148.18	116.42	105.84	84.67	22.68
29	172.32	150.78	118.47	107.70	86.16	22.28
30	175.26	153.36	120.49	109.54	87.63	21.91
31	178.18	155.90	122.50	111.36	89.09	21.55
32	181.02	158.40	124.45	113.14	90.51	21.21
33	183.84	160.86	126.39	114.90	91.92	20.89
34	186.59	163.27	128.28	116.62	93.30	20.58
35	189.31	165.65	130.15	118.32	94.66	20.28
36	192.00	168.00	132.00	120.00	96.00	20.00
37	194.66	170.32	133.83	121.66	97.33	19.73
38	197.25	172.59	135.61	123.28	98.62	19.47
39	199.84	174.86	137.39	124.90	99.92	19.22
40	202.40	177.10	139.15	126.50	101.20	18.97
41	204.90	179.28	140.87	128.06	102.45	18.74
42	207.39	181.47	142.58	129.62	103.70	18.52
43	209.82	183.60	144.25	131.14	104.91	18.30
44	212.26	185.72	145.93	132.66	106.13	18.09
45	214.66	187.82	147.58	134.16	107.33	17.89
46	217.02	189.90	149.20	135.64	108.51	17.69
47	219.39	191.97	150.83	137.12	109.70	17.50
48	221.70	193.98	152.42	138.56	110.85	17.32
49	224.00	196.00	154.00	140.00	112.00	17.14
50	226.27	197.99	155.56	141.42	113.14	16.97
51	228.51	199.95	157.10	142.82	114.26	16.80
52	230.75	201.91	158.64	144.22	115.38	16.64
53	232.96	203.84	160.16	145.60	116.48	16.48
54	235.17	205.77	161.68	146.98	117.58	16.33
55	237.31	207.65	163.15	148.32	118.66	16.18
56	239.46	209.52	164.63	149.66	119.73	16.04
57	241.60	211.40	166.10	151.00	120.80	15.89
58	243.71	213.25	167.55	152.32	121.86	15.76
59	245.79	215.07	168.98	153.62	122.90	15.62
60	247.87	216.89	170.41	154.92	123.94	15.49
61	249.92	218.68	171.82	156.20	124.96	15.36
62	251.97	220.47	173.23	157.48	125.98	15.24
63	253.98	222.24	174.61	158.74	126.99	15.12
64	256.00	224.00	176.00	160.00	128.00	15.00
65	257.98	225.74	177.36	161.24	128.99	14.88
66	259.97	227.47	178.73	162.48	129.98	14.77
67	261.92	229.18	180.07	163.70	130.96	14.66
68	263.87	230.89	181.41	164.92	131.94	14.55
69	265.82	232.60	182.75	166.14	132.91	14.45
70	267.74	234.28	184.07	167.34	133.87	14.34
71	269.63	235.93	185.37	168.52	134.82	14.24
72	271.52	237.58	186.67	169.70	135.76	14.14
73	273.41	239.23	187.97	170.88	136.70	14.04
74	275.26	240.86	189.24	172.04	137.63	13.95
75	277.12	242.48	190.52	173.20	138.56	13.86
76	278.98	144.10	191.80	174.36	139.49	13.76
77	280.80	245.70	193.05	175.50	140.40	13.68
78	282.62	247.30	194.30	174.64	141.31	13.59
79	284.42	248.86	195.54	177.76	142.21	13.50
80	286.21	250.43	196.77	178.88	143.10	13.42
81	288.00	252.00	198.00	180.00	144.00	13.33
82	289.76	253.54	199.21	181.10	144.88	13.25
83	291.52	255.08	200.42	182.20	145.76	13.17
84	293.28	256.62	201.63	183.30	146.64	13.09
85	295.04	258.16	202.84	184.40	147.52	13.01
86	296.77	259.67	204.03	185.48	148.38	12.94
87	298.46	261.16	205.19	186.54	149.23	12.87
88	300.19	262.67	206.38	187.62	150.10	12.79
89	301.89	264.15	207.55	188.68	150.94	12.72
90	303.58	265.36	208.71	289.74	151.79	12.65
91	305.25	267.09	209.86	190.78	152.62	12.58
92	306.94	268.58	211.02	191.84	153.47	12.51
93	308.61	270.03	212.17	192.88	154.30	12.44
94	310.24	271.46	213.29	193.90	155.12	12.38
95	312.70	273.62	214.43	194.94	156.35	12.31
96	313.54	274.34	215.56	195.96	156.77	12.25
97	315.20	275.80	216.70	197.00	157.60	12.18
98	316.80	277.20	217.80	198.00	158.40	12.12
99	318.40	278.60	218.90	199.00	159.20	12.06
100	320.00	280.00	220.00	200.00	160.00	12.00

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened five weeks ago is closed this week and summary of contributed ideas given on opposite page.

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Politics and the Job

Editor, Overseers' Round-Table:

IN REGARD to encouraging or discouraging activity of the superintendent and overseer in local politics.

If there ever was a time when the world needed good leaders it is now. The laboring people are going to be led by someone. They are a large percentage of our population. If good leaders are not provided for them, they will be lead by those who are not loyal to our nation, and who haven't the interest of the employer or employee at heart. In the last few years we have all seen this. For this reason I believe the superintendent and overseer should take an active part in local politics.

I don't think there should be any coercion when it comes to voting, but there should be education and information given to the laboring class as to the issue at stake in campaigns.

There was a time when the two opposing parties met and discussed in open debate the issue at stake. Now we don't have any of these. We hear only one side of the question, and if we are to decide what is best we should hear both sides. For this reason the superintendent and overseer should present the facts to their employees, advise them what they think is the best, and then allow them to vote as they please, assuring them that it will not effect them in any way as to their position and pay. S. R. R.

Editor, Overseers' Round-Table:

I HEARTILY agree with "Pete" that politics should be kept out of the mill.

While the views of the management would, in the majority of cases, be much broader and, as a general rule, prove more beneficial to all concerned, the right of suffrage should be left untrammeled at all times by the employer.

In the past, how often have we seen a certain candidate obtain the full support of the management and only a mimimum of support from the help, mainly due to the fact that the management appeared to have too much at stake in the election result?

If the management decides to enter the political field, which it does on occasions (due to the views of one or more individuals), I consider that it should do so in an unbiased fashion and allow all political parties the same opportunity within the mill. However, like "Pete" I consider there is a certain amount of dynamite in such propaganda.

Very few of us believe that politics and business should be mixed, so let's start at home and say "hands off politics."

"INTERESTED."

About the Rolling Ston

"I HEARD of a man the other day," said Superintendent Chase, "who boasted that he had been in over 40 mills the first 10 years he had worked. On the other hand, I know of a man who is proud of the fact that he has been with the same mill for 35 years. Do you think it is best for a man to work in a lot of mills or stick to one?"

"I happen to know the man you tell of, Boss, who travelled all over the country," Bill spoke up, "and after hearing his story I'm inclined to agree with him. We all admit that a man can't be a rolling stone all his life and amount to much, but if he confines his rolling to his younger days he gets a lot of experience that is valuable to him when he does settle down. If you start off and work in one mill all the time, all you learn is what goes on in that mill and you are pretty sure to find yourself in a rut if you aren't careful. Just as a good overseer can always learn something from an overseer in another mill, and give the other overseer some dope also, a wide-awake young fellow can pick up a lot of information by working around in a lot of different mills. When such a man gets tired of wandering around after 10 years or so, settles down and gets married, he has the makings of a darn good overseer. He's been around enough so he isn't narrow-minded or pig-headed, and when something goes wrong he can search around the back of his head and remember what they used to do at such-and-such a mill to avoid this trouble. I'm all for the man who has had a wide experience."

"Somebody said a long time ago 'once a wanderer, always a wanderer' and it's still very true," Pete replied. "You can't tell me that any man who has the reputation of having worked in a large number of mills is going to be given a job with responsibility no matter how much it looks as though he has settled down. The super will always wonder when the urge to wander will hit the man again and he'll move on. Another point is that in the old days, with textile help scarce, it was easy to roam around the country and get a job wherever the fancy struck

Decentralized Clerical Work

Editor, Overseers' Round-Table:

BY ALL means keep the records accurate, regardless of the place they are kept, who makes out the reports, who has the supervision or who compiles the figures.

I slightly favor the idea of the clerical work being cen-

...nd Experience

you. Today, however, things are different, and you don't see anything like the old 'tramp' weavers; mainly because mills won't give jobs to those bitten by the bug of seeing the world. In the days when each mill thought it had a lot of secrets it might be that you could get good experience by working in various plants, but today you don't need to go snooping around like that. I'm in favor of a bright young lad getting experience, but I think he should do it by working the first few years in various departments of the mill and then specializing in one. At times it may be best to change from one mill to another, but, by and large, the best overseers are men who haven't the idea that the other field is always greener. They are the men who have worked steadily at the job before them and who haven't run all over the country. Bill may say that the rolling stone gets a lot of polish in its travels, but it still holds true that it doesn't gather moss."

◆

Do *you* believe that the best overseers are men who have worked in a large number of mills or men who have stuck to relatively few mills?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

tralized in the main office, letting the same clerk compile reports from the data supplied and cooperating with the overseer who has the privilege of scrutinizing these records at any time that he may desire.

The payroll is a report that everyone is interested in and would like to take a glance at. By rights each should have the privilege of looking at that portion that affects him, and in this manner many errors can be corrected that frequently appear before the checks are made.

Minor details in a department, such as roving and yarn sizings, the time that the hangers were last oiled, etc., should be under the direct supervision of the overseer and the records kept permanently in the office of the overseer.

The larger reports, such as supplies, payrolls, waste, production, and labor turnover should be in the main office, and a graph prepared for the overseer so that he may be able to get a good picture of the conditions that are existing, and also have an opportunity to correct them or improve as he may deem necessary. F. L. Byrd.

Editor, Overseers' Round-Table:

The discussion relative to clerical work being done under overseer's supervision warrants a little thought. Bill says, "somewhere up at the office there are figures for a certain department over a month's time, kept by some clerk who doesn't know anything about things." Granted that the clerk is not familiar with the ins and outs of the overseer's job; on the other hand, is the overseer a clerk? And if he is, has he the time to go into detail of figures showing cost of upkeep and operation of his department? Or, to draw up figures showing cost comparisons from week to week? Hasn't he enough to do to keep those cost figures down where they belong? After all isn't the overseer's place out in his room, in close visual contact with operations, rather than slumped over a desk with a lot of figures—running his department by proxy as it were?

In short, if an overseer has a certain manufacturing cost to shoot at, there are two ways he can hit it: First, by juggling the figures and forcing the result; second, by running his department to conform with that manufacturing cost kept by the clerk up at the office who doesn't know anything about things. The first method doesn't count.

James R. Wray.

Editor, Overseers' Round-Table:

Pete is right, especially if the system is laid out in a way that the superintendent and overseers have a chance to look at the figures made out at the main office. As Pete says, any overseer who runs his department right knows his labor cost, production, etc., and a weekly payroll report showing his indirect and direct cost as well as what his direct cost *should be* and the variance whether over or under the standard cost, should be a perfect check for him and he can convince himself whether he would know the exact cost of his department without the report issued by the office. This applies to expenses where actual expenses for a month are shown, also the earned burden and the over or under-earned burden. Overseers do not realize the value of office-work and if production records, etc., were kept under their supervision the proper results would not be obtained.

Experience has proven that overseers always get better figures for their departments than the office gives them credit for and, since these figures are being used in the accounting end of the mill, it is for the good of the concern if the department records are centralized at the main office. However, reports for every payroll and monthly expenses must be given to the superintendent who gets in touch with the overseers and, if necessary, has the figures analyzed by the office-manager. Office.

(Will the above correspondent in Valleyfield, Quebec, send in his name and address?)

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Summary of Discussion on Keeping Department Records

A considerable majority was much against having the clerical work necessary in connection with a department, such as records of production, costs, etc., done under the direct supervision of the overseer rather than centralized at the main office. The arguments were that decentralization was not economical, that the overseer was not clerically minded and had enough to do in productive work, and that he should be interested enough to secure the key figures for study even though the recording was done at the main office.

Bedspread Group Finds Position Good; Reaffirms Opposition to Piracy

THE Bedspread Group in The Cotton-Textile Institute held a meeting on Thursday of last week attended by a large number of representatives of bedspread mills and selling agents.

The discussion concerning the statistical position of bedspreads brought out the fact that mills have been successful in avoiding overproduction during the last several months. Stocks are at conservative levels and it was evident that manufacturers will continue to give close attention to the question of avoiding overproduction and accumulation of surplus stocks. R. W. Bennet, of Bliss, Fabyan & Co., Inc., chairman of the Bedspread Group, appointed the following committee for securing more complete knowledge concerning bedspread statistics: A. E. Van Bibber, Clarence Whitman & Sons Co.; J. B. Yates, Burlington Mills; W. A. Barden, Cannon Mills.

It was unanimously recommended that terms in the sale of bedspreads of 2%—10 days—60 extra, f.o.b. mill, be strictly adhered to, all invoices to be dated from date of shipment.

The group re-affirmed its approval of a resolution adopted several years ago concerning the imitation of bedspread patterns, which read as follows:

1. That the bedspread mills cooperating with the Cotton-Textile Institute, express themselves as strongly opposed to any infringement of a distinctive design or pattern originated and in use by another mill and regard such action as an unfair and unsound trade practice.

2. That the chairman of the Bedspread Advisory Committee of the Cotton-Textile Institute, be authorized to appoint a Trade Practice Committee of three members who will inquire into alleged instances of such unfair practice that are brought to its attention affecting bedspread manufacturers or wide piece goods mills who sell to bedspread manufacturers.

3. That if, after examining into such matters presented to it, it should seem to the Trade Practice Committee that there has been an unfair duplication or imitation of such a distinctive design or pattern, the committee will then use its good offices to discourage the practice by taking up the question of its unfairness and unsoundness with the mill or manufacturer concerned.

The Trade Practice Committee authorized in the above-mentioned resolution was increased from three members to five members. Chairman Bennet appointed the following to serve on this committee: C. Morton Whitman, Clarence Whitman & Sons Co.; F. A. Williams, Cannon Mills; T. Ellis Ramsdell, Monument Mills; F. D. Goode, Monadnock Mills; J. B. Yates, Burlington Mills.

The following were present at the meeting: R. W. Bennet, Bliss Fabyan & Co., Inc.; W. A. Barden, Cannon Mills; J. B. Yates, Burlington Mills; F. D. Goode and F. R. Thomas, Monadnock Mills; A. E. Van Bibber and B. Cobb, Clarence Whitman & Sons Co.; T. Ellis Ramsdell and W. W. Bricka, Monument Mills; B. F. Meffert, Amory, Browne & Co.; W. L. Pierce, Carolina Cotton & Woolen Mills; N. G. Robertson, Jr., Scranton Lace Co.; P. Hopple and W. G. Gunter, Mill Associates, Inc.; C. A. Launer, Rosemary Sales Corp.; Edward H. Jones, Pelzer Mfg. Co.; Geo. A. Moffett, J. P. Stevens & Co.; Paul B. Halstead, secretary, the Cotton-Textile Institute.

▸ World Rayon Production First Quarter Exceeds 1931 Average

It is estimated that world rayon production during the first quarter of 1932 totalled 125,350,000 lb. as compared with 117,700,000 lb., the average per quarter for 1931. Details follow:

	First Quarter 1932 lbs.	Quarterly Aver. 1931 lbs.
United States	35,800,000	35,200,000
Italy	20,550,000	19,050,000
Britain	19,280,000	13,645,000
Germany	13,650,000	13,750,000
Japan	12,975,000	11,700,000
France	8,125,000	9,200,000
Holland	3,800,000	4,950,000
Switzerland	2,925,000	2,475,000
Belgium	2,300,000	2,600,000
All other	5,945,000	5,130,000
Total	125,350,000	117,700,000

▸ Summer Courses at Mass. Inst. of Technology

Special courses based on the most advanced knowledge in textile microscopy and technical analysis will be offered in the Textile Laboratory of the Massachusetts Institute of Technology this summer. The work has been arranged to meet the requirements of advanced students, textile executives, and research directors, and provisions have also been made for experimental research in the composition and properties of textiles. The courses will be given from July 27 to Sept. 7, under the direction of Professor E. R. Schwarz.

The unique optical equipment of the laboratory, said to be the finest available, will be used in the course in textile microscopy. This work will include discussion of the diverse techniques employed in studying fibers, yarns, and fabrics, and a study of the various optical instruments designed or adapted for textile research.

Apparatus and methods for the physical testing of textiles will be studied in the course on textile technical analysis. Practical research problems will be presented for solution, and typical sets of textile laboratory data discussed. Tests will be described for bursting, tearing, and tensile strength, resilience, thickness, porosity, rate of moisture regain, variation of physical properties with moisture regain, elasticity, elongation, repeated stress application, and abrasion. Professor Schwarz will lecture on the graphical interpretation of data, precision of measurements, report writing, presentation of data, theory of testing machine construction and operation, and the application of mathematics, as in nomographic charts, to research.

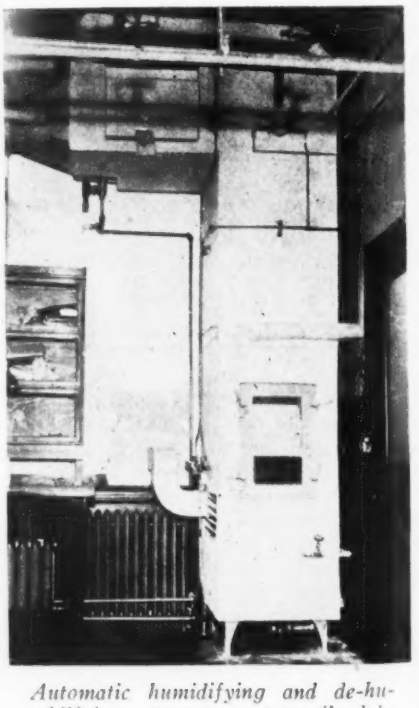
Students who desire to round out the above courses with laboratory experiments will find unusually complete facilities at the Institute. In the textile laboratory is a central station system of humidification and de-humidification which can be set for any desired conditions and automatically maintained constant over long periods of time. Additional equipment makes it possible to raise the humidity to high levels for special work. New machines are available with capacities ranging from one ounce to 2,000 pounds, with a wide range of speeds and adjustments.

Complete equipment for the study of textiles in polarized light is provided, as well as for precise cross-sectioning, micro-projection at high magnifications, and photomicrography, both stereoscopic and in natural color.

The courses may be taken separately or simultaneously, and research students may devote their time entirely to physical testing, to textile microscopy, or to both subjects.

▸ Durene Cotton Fashions Shown in Television

Durene cotton fashions were highlighted during National Cotton Week in a television program given over the Columbia Broadcasting System, Television Station W2XAB, at 9:45 p.m., Thursday, May 19, under the direction



Automatic humidifying and de-humidifying apparatus at textile laboratory of M.I.T.

Official "relief" costume for women selected by Olympics committee. It is of Durene and made by Abood Knitting Mills. The costume was televised last week.

of Mrs. Chandler Hall. Mrs. Hall's showing included eight Durene cotton fashions: a skirt and jacket with which will be worn the officially chosen Durene "Relief" sweater to be used by women participants in the Olympics at Los Angeles; a Ribcord hat also chosen for the Olympic games; and a town and country coat of Durene Ribcord. Mrs. Hall explained the items as they were shown.

▸ Throwsters Institute Starts Weekly Luncheons in N. Y.

The Throwsters Research Institute this week inaugurated round-table luncheons for members. The luncheons are held every Wednesday in the grill room of the Hotel Taft, New York City, at 12:30. The aim of the luncheons is to promote fellowship among the throwsters, both those located in New York and those visiting from out-of-town, and to stimulate exchange of ideas on the problems of the yarn industry.

▸ Textile Chemists Hear Talk on Consumer Textiles

The May meeting of the New York Section, American Association of Textile Chemists and Colorists, was held at the Chemists' Club, New York, on Friday evening, May 27. Following the usual informal dinner, Ephraim Freedman, director of bureau of standards, R. H. Macy & Co., delivered a paper entitled "The Research Chemist Looks at Consumer Textiles."

▸ Rail Silk Shipments Show Increase

Thirty-one per cent of raw silk imports from the Orient moved by transcontinental rail during April, as compared with 14% in December.

Wool Cooperative and Independents Confer on Orderly Marketing of Clip

THE situation in wool has recently reached a point where something like emergency measures of cooperation have seemed necessary to bring to an end, if possible, the continuous decline in values which is not only impoverishing the wool growers past point of redemption but also producing in merchandising and manufacturing circles a degree of uncertainty without precedent in recent years.

Several of the leading Boston wool merchants had a series of informal conferences recently, culminating in a meeting with officials of the National Wool Marketing Corp., aimed to devise legal cooperation to end the paralyzing lack of stability in wool values, particularly as related to the taking over of the 1932 wool clip. Among those taking part in the early conferences were: R. L. Turnbull, president of the Boston Wool Trade Association, Wm. E. Jones of Albert W. Elliott, E. F. Leland, and for the National Cooperative, H. B. Embach, general manager, Paul Draper, and L. U. Edgheill.

Pressed for a statement President Turnbull gave out the following: "In the interest of the wool grower, various and several of the wool and textile trade have been consulting together to accomplish the successful distribution of the 1932 clip. No definite conclusions have been arrived at as yet, but it is understood, progress is being made."

Following the Boston conference, President Turnbull of the Wool Association and general manager Embach, of the National Cooperative, went to Washington for a conference with Chairman Stone, of the Federal Farm Board. Interviewed on his return, President Turnbull stated that despite rumors to the contrary, nothing of a definite character has been agreed upon. All rumors regarding an attempt to stabilize wool values by agreement on a definite basis, or to suppress free competition for the 1932 clip as between the cooperatives and the independents he declared entirely unfounded.

That the cooperatives and independents should sit together on this question would have seemed incredible a few months ago. Active competitors for the new clip, it seems that circumstances had forced them into a more tolerant and mutual cooperation.

While any definite change for the better is not evident at the moment, sentiment is becoming more hopeful, particularly as the trade is no longer apprehensive regarding the policy of the National Cooperative in handling its unsold stocks of last year's wool, which are in excess of the aggregate amount held by the independent trade. It is becoming more clearly recognized that unnecessary competition tends to defeat the one common and necessary objective of establishing a steady and basic value on wool.

The amount of wool to be shorn this year is still a matter of guesswork, estimates ranging from 5 to 15% below the 1931 record clip and reports reaching the Cooperative from the principal wool-producing sections indicate the likelihood of fewer breeding sheep being carried over into the 1933 season. In a broad view, raw wool must be considered in a favored position. Stocks of many basic raw materials remain at record high figures; but not so with wool. Consumption of domestic wool for many years has been running close to production and this balance has been maintained by diminishing arrivals of foreign wool, imports of which at present are at the low point for years.

▸ Discuss New Wage Agreement

With the expiration on Aug. 31 of the present agreement between the Full-Fashioned Hosiery Manufacturers of America and the American Federation of the Full-Fashioned Hosiery Workers, negotiations have been begun between representatives of the manufacturers and union officials looking to a new agreement. The manufacturers are represented by George F. Lang, president, Co-Ed Silk Hosiery Mills, Philadelphia; Parker Margeson, vice-president, Phoenix Hosiery Co., Milwaukee; Joseph Haines, Jr., president Haines Hosiery Mill, Philadelphia, secretary of the group; Leo Propper, president, Propper-McCallum Hosiery Co., New York. The committee from the union includes representatives from the Philadelphia, Milwaukee, New England, New Jersey and New York districts. Existing conditions in the industry will be carefully studied and the prospects for the future will be considered in the discussions, which are expected to continue for several weeks.

▸ Philadelphia Manufacturers Outing Set for June 29

The sixth annual outing of the Philadelphia Textile Manufacturers' Association will be held at the Manufacturers' Country Club, Oreland, Pa., Wednesday, June 29. The usual features will be offered in the golf tournament followed by dinner in the evening at the clubhouse.

▸ Clayton Co. Reports Record Swimsuit Call

The Clayton (N. Y.) Mfg. Co., manufacturer of knitted bathing suits, is now enjoying the biggest year's business in the history of the plant, according to George Hawn, head of this firm. Mr. Hawn said that while last year his firm shipped 625,884 bathing suits, this year's business will far surpass that. The firm is now turning out 5,000 suits daily.

NEWS about MEN

Robert Glassford has been re-elected president of Bliss, Fabyan & Co., Inc., New York. Other officers are: **R. D. Halliwell** and **R. D. Vanderbilt,** vice-presidents; **Malcolm Black,** secretary-treasurer; and **J. W. Hamsen,** assistant treasurer. The board of directors is: **E. L. Hopkins,** chairman; **C. N. Bliss, G. E. Buxton, Malcolm Black, R. D. Halliwell, Robert Glassford,** and **R. D. Vanderbilt.**

Frank T. Stanfield, president of Stanfield's, Ltd., Truro, N. S., Canada, was married recently to Miss Beth Matheson. Mr. Stanfield is the son of the late Frank Stanfield, former president of the company, who died last summer.

Mrs. John L. Potter, widow of John L. Potter, who died early in May, has been elected president of Royalknit Glove Corp., Johnstown, N. Y., to fill his place. She has been a director of the company for some time, but will take no active part in the conduct of the business. The company will be run by **E. A. Hagar** and **J. W. Blewer,** who have been associated with it for some time.

William S. Dowdell has been nominated president of the New York Wool Top Exchange. Others nominated are: For first vice-president, **Philip B. Weld;** for second vice-president, **Joseph R. Walker;** for treasurer, **Kenneth G. Judson.** Nominated for governors: **Eric Alliot, William A. Boger, Frank J. Knell, Elwood P. McEnany, John H. Pflieger, Henry H. Royce, Simon J. Shlenker, Gordon S. Smillie, Max W. Stoehr, Herbert K. Webb,** and **J. Victor di Zerega.** For inspectors of election: **William C. Bailey, E. Malcolm Deacon,** and **Byrd W. Wenman.** The nominating committee: **Edward K. Cone,** chairman; **William J. Jung, William Wieck, Frank H. Wiggin, Thomas F. Cahill.**

W. W. Neal, president of Marion (N. C.) Knitting Mills (Inc.), became ill en route to New York and was forced to return home, where he is now under the care of a physician.

Rawls Howard, president of Runnymede Mills, Inc., Tarboro, N. C., has been elected mayor of Tarboro.

W. E. Thompson, president of Supersilk Hosiery Mills Ltd., London, Ont., has returned from a business trip to Vancouver, B. C.

Maurice du Pont Lee, a former vice-president of DuPont Rayon Co., has transferred to Buffalo and is now general manager of the technical department. **Clayton M. Albright,** also a former vice-president, has become treasurer of Du Pont Rayon Co. and Du Pont Cellophane Co.

C. M. Butler, comptroller of Belding-Heminway Co., New York, since 1928 has succeeded **F. C. Larkin,** resigned, as secretary-treasurer of the company. Mr. Larkin joined the Richardson Silk Co., in 1911, and left there for military service in the World War. Upon his return he became an auditor and accountant for Belding-Heminway and in 1925 was made secretary-treasurer. His future plans are unknown.

Blank & Stoller

John E. Bassill, newly elected president of Tubize Chatillon Corp., who succeeds B. E. Slaughter. Mr. Bassill was formerly vice-president and general manager of the company

Robert C. Bagg, treasurer and a director of Holyoke (Mass.) Silk Hosiery Co., will take over the work of **E. L. Winpenny,** former vice-president and sales-manager of the company with offices in New York. Mr. Winpenny, at one time with McCallum Hosiery Co., Northampton, Mass., joined Holyoke Silk Hosiery, when it was formed about 12 years ago. He will become sales manager of the "Gold Stripe" division of Gotham Silk Hosiery Co., taking the place of **Paul C. Baker,** who resigned April 1 to go with Montgomery Ward & Co.

James A. Burke, Jr., has been elected treasurer of Sagamore Mfg. Co., Fall River, Mass., to succeed the late W. L. S. Brayton. **John S. Brayton** has been appointed clerk of the corporation.

Carey R. Kinney, treasurer of the Elmvale Worsted Co., Pittsfield, Mass., has been elected a vice-president of the City Savings Bank, Pittsfield.

W. B. Cole has been named temporary receiver for the Mooresville (N. C.) Cotton Mills, on complaint of the Hunter Mfg. & Commission Co., New York, by Judge Michael Schneck.

Dr. Chas. E. Mullin, who is on leave of absence from the Clemson College (S. C.) Textile School, was in Shanghai, China, April 25, after traveling 6,000 miles through the interior of China studying methods of dyeing woven fabrics and collecting unusual specimens of textiles made in that country.

Charles R. Collins, treasurer of Clover (S. C.) Mills Co., has moved his residence from Charlotte, N. C., to Gastonia, N. C., which is only a few miles from Clover. He succeeds **John Tillett,** who has resigned as treasurer.

E. A. Thompson, who recently became vice-president and sales manager of the Norwich (N. Y.) Knitting Co., will supervise the newly opened sales office at 346 Broadway, New York. **E. D. Barnes** has been promoted to general superintendent of the company, and **Jno. Myers,** formerly with Frisbie & Stansfield Co., has been made superintendent of the "Champknit" and "Betsyknit" departments. **E. T. Ryan,** formerly with Augusta Knitting Corp., Utica, N. Y., has become superintendent of the "Mickey Mouse" department. **F. H. O'Hara,** president of the company, made these announcements.

Franklin Booth, representative of Platt Bros. & Co., Ltd., Oldham, Eng., arrived in Canada recently and is now on a tour of the woolen and worsted mills in the Dominion.

Habersham King, Jr., has been named general manager of El Paso (Tex.) Cotton Mills Co. He was formerly superintendent. The plant is employing about 30 workers now but expects to expand with the advent of $10,000 new capital.

Alfred V. Bodine, plant manager of the Raybestos-Manhattan, Inc., Bridgeport, Conn., has been elected president of the Bridgeport Chamber of Commerce.

D. J. McLean has joined the Belding-Heminway Co. sales organization and will handle their hosiery. He was formerly with Holeproof Hosiery Co. and Gotham Hosiery Co. **M. D. Werbel,** formerly with Amalgamated Silk Corp., Cohn-Hall-Marx Co., and Corticelli Silk Co., will serve the company in the New York cutting-up trade. **John W. Geiger** will contact New York retailers for Belding-Heminway.

B. Taylor, sales manager of Courtaulds (Canada) Ltd., Cornwall, Ont., has returned from a six weeks' visit to England.

Henry Bradford has become buyer for the Berryton (Ga.) Mills.

ATTRACTIVE DISPLAYS FEATURED COTTON WEEK: *Left: James McCutcheon & Co., New York retailers, showed colorful cotton apparel and piece goods. The window posters were mounted on cotton covered cards. Right: Du Pont Boardwalk Exhibit at Atlantic City stressed cotton fabrics in a scene with cotton drapes embellished with cotton balls.*

Joseph **Smith** has been appointed overseer of finishing at the Clover Worsted Co., Franklin, Mass., to succeed Richard **Hill.**

Gaston **Gage,** former overseer of the cloth room at the Chester, S. C., plant of the Aragon-Baldwin Cotton Mills, has resigned.

Francis **E. Boyle** is now overseer of weaving at Fitchburg (Mass.) Duck Mill.

J. W. **Trigg,** former overseer of the weaving department of the Eagle & Phenix Mills, Columbus, Ga., is now overseer of the weaving, beaming and slashing division of the Industrial Cotton Mills Co., Inc., Rock Hill, S. C.

Textile Calendar

Philadelphia Textile School, Commencement, Philadelphia, June 2; alumni outing and dinner, June 3, 1932.

Chicago Yarn Men's Circle, 11th annual golf tournament, Nippersink Lodge, Genoa City, Wis., June 22 and 23, 1932.

American Society for Testing Materials, annual meeting, Atlantic City, N. J., June 20 to 24, 1932.

Southern Textile Association 24th annual meeting, Hendersonville, N. C., June 24 and 25, 1932.

Philadelphia Textile Manufacturers Association, Sixth annual outing, Manufacturers Country Club, Oreland, Pa., June 25, 1932.

Piedmont Section, American Association of Textile Chemists & Colorists, Summer meeting, Charlotte, N. C., July 16, 1932.

Southern Textile Exposition Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

Southern Textile Association, regular fall meeting, Greenville, S. C., during week of Oct. 17, 1932 (exact date to be announced later.)

National Association of Cotton Manufacturers, Boston, Oct. 26 and 27, 1932.

Obituary

Donald Stuart Mackay

Donald Stuart Mackay, aged 63, woolen goods operator, died May 23, in a New York hospital, following a month's illness. Mr. Mackay spent all of his business life in the woolen industry, operating under his own name, originally as Donald S. Mackay, which was succeeded by Howe & Mackay. After dissolution of this company, he again operated under his own name until 1926 when the firm name became Mackay, Sigler & Taylor. He retired in 1928. Mr. Mackay originally joined the firm of Swenarton & Keiser as western salesman, carrying hosiery and underwear and also the line of the Tilton Mills. Tilton Tweeds were famous along with Victory cassimeres of that period and, with a change in the affairs of the Tilton Mills, that organization became one of the first, if not the first, to sell goods direct. Mr. Mackay joined forces with the Tilton Mills in 1888, severing his connections with Swenarton & Keiser. He was born in Brooklyn. For several terms, Mr. Mackay was Commodore of the Bayside Yacht Club, and was a member of the Wyandanch Club, The Manhattan Club and Soundview Golf Club. He is survived by his son, Donald H. Mackay, of Willimantic, Conn., and a daughter, Mrs. J. K. Taylor of Great Neck, L. I.

Timothy F. Harrington

Timothy F. Harrington, aged 67, known as dean of the wool pulling industry, and associated with the firm of J. J. Harrington & Co., New York, died this week. He is survived by his widow, two sisters, Denis Harrington, a brother, head of the Harrington company, and another brother in Spokane, Wash. Interment was in Chappequa, N. Y.

E. L. Cetwick

E. L. Cetwick, president and treasurer of the Cetwick Silk Mills, Inc., Asheboro, N. C., died in his sleep May 17, at Bradford, Pa., his former home, where he went several weeks ago to rest after a period of ill health. Mr. Cetwick went to Asheboro about eight years ago and established a silk throwing plant. The mills have been operating steadily and capacity has been nearly doubled since organization. He was unmarried and lived with two sisters, who were with him at the time of his death.

John L. Potter

John L. Potter, aged 75, died suddenly May 6, following a heart attack. He founded the Royalknit Glove Corp., Johnstown, N. Y., in 1884, and was president and owner of the company for 48 years until the time of his death. He was the originator of the seamless knit glove lining which is the main product of the company. Mr. Potter was a prominent business man of Johnstown and a director in a bank as well as prominent in the business associations of the city. He is survived by his widow.

Lewis F. Chapin

Lewis F. Chapin, cashier of the Windsor Print Works Division of Consolidated Textile Corp., at North Adams, Mass., died May 9, in New York, where he had been undergoing treatment. He had been with the company for 45 years.

Jiro Mayuzumi

Jiro Mayuzumi, former general manager of the New York office of Hara & Co., Japanese silk importers, died in Japan recently, according to advices received from Yokohama. Mr. Mayuzumi was widely known here as a classification and testing expert, and served on the delegation attending the Second International Technical Raw Silk Conference held in New York in the fall of 1929. He was a member of the National Raw Silk Exchange and served on the adjustment committee of that body.

E. L. Joyner

E. L. Joyner, a native of Tupelo, Miss., and president of the Tupelo Cotton Mills, died recently. He was also manager of the local plant of the Federal Compress Co.

NEWS about MILLS

Cotton

Grosvenor-Dale Co., North Grosvenor Dale, Conn., has increased operations at its No. 2 mill, which has been on a retarded schedule for some months. The improvement is due to a change in quality of product.

Fox Valley Cotton Mills, Inc., 125 North River St., Aurora, Ill., have been organized with a capital of $100,000. The company is headed by C. D. Knight, E. T. Curry and B. P. Alchuler.

Cannon Mills Co., Concord, N. C. Fire occurred on May 16 at the warehouse located near Plant No. 2. A large quantity of cotton stored there, belonging to Plant No. 6 was damaged.

Cawtawba Cotton Mills, Newton, N. C., closed for some time, have been reopened. J. Lewis Schrum has been elected secretary-treasurer to fill the vacancy caused by the death of J. Wilfong Young, early in February.

Statesville (N. C.) Cotton Mills have installed Delahaunty dyeing machines, one Tolhurst extractor and one Proctor & Schwartz four-section raw stock dyeing machine.

***Lola Mfg. Co.,** Stanley, N. C. Property of this company was sold at public auction May 16 by an attorney for Carl H. Potter, receiver, to Jackson and Smith, of Gastonia, N. C., for about $35,000, which amount includes the assumption of all accrued interest and other liabilities attached to the properties. Plant equipment includes 10,080 ring spindles and six looms.

***East Providence (R. I.) Mills, Inc.,** have filed plans for an addition to its plant on Grosvenor Street.

Manville-Jenckes Co., Pawtucket, R. I.—Superior Court has authorized receivers of this company to dispose of property at Pawtucket at public auction, establishing up-set price of $500,000. Company is moving machinery from plant to mill at Manville, R. I.

Laura Cotton Mills, Pawtucket, R. I., are formulating plans to operate a local plant. Fred Brasco, 25 Knight St., Providence, is an official.

Anderson (S. C.) Cotton Mills have awarded a contract to the Townsend Lumber Co., Anderson, including re-roofing of Mill No. 2, re-flooring of Mill No. 1, and miscellaneous work, estimated to cost about $65,000.

Aragon-Baldwin Cotton Mills, Inc., Chester, S. C., will be closed for four weeks, as of May 23.

Wool

La Porte (Ind.) Woolen Mills, are running on a basis of about 60% of capacity, with 50-hour weekly schedule.

Waucantuck Mills, Uxbridge, Mass., sustained damage through fire at mill at Wheelocksville recently. An official estimate of loss has not been announced.

Yale (Mich.) Woolen Mills has resumed production following a month's close. Carding, dyeing, and spinning departments started first; the weaving department was the last to begin. The company makes upholstery for automobiles. About 400 employees are working.

Eyers Woolen Mill, Gilsum, N. H., has been sold to New York interests who will operate it as the **Gilsum Woolen Co.** Present plans include the hiring of about 50 workers to operate the mill, built in 1845, which has been closed about a year.

American Hair & Felt Co., Newark, N. J., is running on a five-day week schedule in the majority of departments, giving employment to close to normal working quota.

***Brighton Worsted Co., Inc.,** Philadelphia, has received permission from the U. S. District Court to dispose of the machinery. Edward H. Moyer, Benjamin T. Britt, and James Hulton, receivers, have paid about 20% of the claims through liquidation of assets.

Ferguson Carpet Co., Germantown, Philadelphia. Assets of company have been sold for consideration of $5,500.

Waite Carpet Co., Oshkosh, Wis., plans repairing portion of mill recently damaged by fire, including warehouse unit. Total loss estimated in excess of $60,000, with equipment.

Knit

Lambert Hosiery Mills, Lambertville, N. J., have been organized with capital of $125,000. It is understood that the company will take over the local plant of the **Campbell Silk Hosiery Mills,** for which Hervey S. Moore, Trenton, N. J., and James L. Rankin, Chester, Pa., have been receivers. The new company is headed by Frank N. Entwistle, 44 Garfield Pl., Maplewood, N. J.; F. Frank Doherty, Chester, Pa., and W. Harold Chrismer, Ardmore, Pa.

Nolde & Horst Co., Lebanon, Pa. This branch of company has been closed indefinitely and will not be reopened until business warrants it. Production there occupied whole floor of Hermann-Aukam Bldg., and plant was in operation about three years.

Montgomeryville Hosiery Mills, Inc., Lansdale, Pa. Final meeting of creditors will be held June 1 at 10:15 A. M., in the U. S. District Court at Norristown, Pa.

William Brown Co., Philadelphia, is now running on full schedule, with regular working quota. Wm. A. Long, general manager, states the mill is practically sold up to the end of June production, and is working on a day and night schedule on orders for their "Granite" full fashioned hosiery as well as other unbranded lines. Machines which had not been in operation for 18 months, are now active.

Eastern Hosiery Mills, Ltd., Truro, N. S., Canada, is employing 300 workers at the present time, according to Donald Gregg, manager of the Truro plant.

Silk

Katterman & Mitchell Co., Columbus, N. C., has been equipped with silk throwing machinery, representing an investment of about $50,000. Silk that is thrown in this plant will be woven at the company's plants at Stanley, N. C. and Laurens, S. C. J. E. Troy, Scranton, Pa., in the employ of the company for the last 15 years, has been named superintendent of the Columbus plant and will employ about 40 local people.

Harris Brothers Silk Co., Paterson, N. J., has plans for a one and two-story addition to mill, and will ask bids on general contract in near future. Lee & Hewitt, 152 Market St., Paterson, are architects.

Freeland (Pa.) Silk Throwing Co., has resumed operations at its mills, following a curtailment for a number of weeks.

Adanac Silk Mills, Ltd., Montreal, Que., Canada, have been incorporated with a capital of $10,000, no par, by Claude S. Richardson, Francis G. Bush, and John L. McCrory of Montreal.

Finishing

Plymouth Rubber Co., Inc., Canton, Mass., plans repairing damage to main plant, including reclaiming mill and warehouse unit, recently caused by fire, with loss estimated over $40,000, including equipment.

United Wool Piece Dyeing & Finishing Co., Passaic, N. J., has been organized with capital of 1,000 shares of stock, no par. It is understood that the company will take over and succeed to the **United Wool Dyeing & Finishing Co.,** with mill on Canal St., Passaic. The incorporators of the new company are S. Raymond Alexander, Passaic; and Jean Elkind, Paterson, N. J.

**Indicates previous mention of project.*

Crosby Dye Works, Paterson, N. J., recently organized with capital of 1,000 shares of stock, no par value, to operate a local mill, will be represented by Emanuel Shavick, 140 Market St., Paterson, attorney. The incorporators include G. Templeton and B. Moran, Paterson.

Queen Dyeing Co., Providence, R. I., will close June 1 through the summer. Work will be done at other New England plants of the U. S. Finishing Co., according to Henry B. Thompson, president.

Miscellaneous

General Asbestos Textile Co., North Brookfield, Mass., was sold at auction for $50,000 to **Katke Corp.** of Chicago, maker of similar products, including asbestos friction goods, brake linings and clutch facings.

European Art Weaving, Clifton, N. J., has filed a certificate of trade name with County Clerk Lloyd B. Marsh, Paterson, N. J. It will be operated by Emerick Nagy, 105 Garden St., and Andrew Torok, 114 East 1st St., of Clifton. They were both connected with Tubize Chatillon Corp., as pioneers, Mr. Nagy was chief chemist, and Mr. Torok, a textile engineer. The new company will specialize in fine linen damask weaving with original and artistic designs, constructed by themselves.

Favorite Lace & Embroidery Co., Inc., Union City, N. J., recently organized with capital of $50,000, to operate a machine embroidery plant, will be represented by Irving Hoffman, 515 Thirteenth St., West New York, N. J. The company is headed by Samuel Feinman, North Bergen, N. J., and Michael Fronjian, West New York.

***Mutual Industries, Ltd.,** Port Moody, B. C., Canada, in the process of formation, has been exempted from taxation for 10 years. The building, formerly occupied by the Port Moody Steel Works, will serve as a warehouse and 68 acres adjoining the plant have been purchased for further development. Under terms of agreement with civic authorities, a textile plant must be in operation within two years. It is understood that European capital is interested in the project; J. Currie & Co., 729 Vancouver Bldg., Granville St., Vancouver, B. C., are handling the matter. The company will be privileged to manufacture woolen or cotton cloth.

Business Literature

Aromatic Products. Givaudan-Delawanna, Inc., New York. Price list of aromatic products, conditions of sales, and description of products.

Vacuum Cleaners. B. F. Sturtevant Co., Boston, Mass. General specifications of the portable and stationary cleaners manufactured by this company, together with a detailed description of the various attachments which may be applied, are contained in a 6-page, illustrated catalog.

Size Pumps. Saco-Lowell Shops, Boston, Mass. A parts catalog on the rotary size pump, in addition to illustrating and numbering the various parts, gives suggestions for the care of the machine.

Wool Spinning. Whitin Machine Works, Whitinsville, Mass. "Wool Spinning by the Frame Method" is the title of a 16-page booklet which has just been issued by Whitin. Commencing with a brief history of woolen yarn spinning, it goes on to describe the early spinning frame, the cycle of operation of both the mule and the modern frame and points out why frame-spun yarns are even. Recent refinements in the wool frame are described.

Worsted Spinning. Saco-Lowell Shops, Boston, Mass. Advantages to be secured by making the change from cap spinning to ring spinning are outlined, and it is pointed out that there are many worsted spinning frames which can be changed from cap to ring at a very low cost per spindle.

Sodium Perborate. The Roessler & Hasslacher Chemical Co., Inc., Niagara Falls, N. Y. This folder is a ready reference on the properties and uses of this active oxygen product. The title of the folder is "A Few Popular Uses of R. & H. Sodium Perborate."

TEXTILE WORLD Cotton and Wool Index Numbers

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Aver. for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January	192	197	195	173	184	187
March	205	202	199	181	190	192
April	196	194	193	180	187	188
July	197	183	185	176	181	182
October	174	189	193	178	186	186
1926						
January	167	175	177	162	170	171
March	155	166	168	157	163	163
April	153	163	161	155	158	159
July	149	149	151	141	146	147
October	106	141	147	144	146	143
1927						
January	107	134	140	140	140	138
March	114	137	144	142	143	140
April	118	136	143	142	143	140
July	143	149	156	145	151	150
October	168	176	184	169	176	176
1928						
January	151	163	166	166	166	165
March	155	159	161	166	164	163
April	164	160	160	165	162½	162
July	174	167	165	168	166½	167
October	157	161	162	164	163	162
1929						
January	162	166	158	169	163½	164
March	170	165	160	172	166	166
April	163½	164	157	173	165	165
July	149	160	149	166	158	158
October	147	160½	155	161	158	158
1930						
January	138	149	141	157	149	149
March	120	138	130	157	144	142
April	131	139	129	156	143	142
July	105	120	119	142	130	128
October	85	110	115	125	120	117
1931						
January	82	102	107	124	115	112
March	87	102	109	125	117	113
April	82	100	106	125	116	111
July	75	97	97	120	109	105
October	50	84	76	112	94	90
1932						
January	53	78	74	102	88	85
February	55	78	80	99	89	86
March	54	77	79	99	89	85
April	49	75	73	98	85	82

DURING April the TEXTILE WORLD index numbers continued their downward course and each established a record low. The decline was particularly severe in the wool series, with raw wool dropping 6 points and tops 4 points. Very little buying in the goods market, extremely low wool consumption and a stock situation that is still unsatisfactory at the fabric end, account for the slump.

After holding up fairly well the early part of the year, raw cotton broke through the low established last October, due to favorable crop reports and low consumption figures. As a good part of the decline in cotton took place during the last week in April and was not reflected immediately in yarn prices the loss in the yarn index was only 2 points as compared with a loss of 5 points in the raw cotton index. Gray goods dropped 6 points while colored goods held fairly steady with a 1 point loss.

The extent of the drop from March figures becomes evident when it is considered that the total loss for all of the indices (leaving out the averages) was 29 points, or an average loss of 3.6. This compares with an average decline of 2.7 from February to March. The difference is accounted for by the fact that wool continued to decline at about the same rate, while cotton joined the movement.

Inquiries regarding interpretation and use of these index numbers may be addressed to TEXTILE WORLD, 1427 Statler Bldg., Boston, Mass.

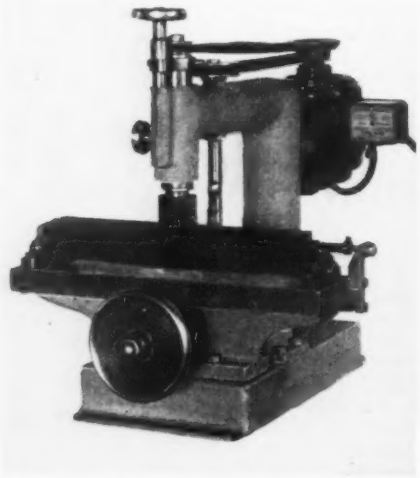
WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver.
July 31, 1914	100	100	100	100	100
1925					
January	215	213	211	229	221
March	241	253	241	236	240
April	219	234	230	241	235
July	216	217	216	239	227
October	216	212	212	227	220
1926					
January	215	213	211	229	221
March	198	199	204	211	206
April	181	193	198	211	202
July	173	184	189	202	193
October	178	186	193	197	192
1927					
January	178	187	190	197	191
March	178	183	184	199	190
April	177	182	184	193	188
July	180	183	183	193	188
October	185	185	189	194	190
1928					
January	194	193	186	195	192
March	198	206	198	198	199
April	199	206	198	198	199
July	204	206	203	197	200
October	197	197	203	198	199
1929					
January	199	198	201	198	199
March	194	193	200	211	204
April	187	189	198	197	195
July	169	170	188	197	188
October	164½	169	188	197	187
1930					
January	148	161	177	197	181
March	132	144	169	202	177
April	127	139	164	186	167
July	125	135	158	184	163
October	124	135	154	180	161
1931					
January	112	127	148	178	156
March	101	112	139	174	147
April	101	112	134	167	143
July	98	111	134	162	140
October	97	108	127	147	132
1932					
January	94	104	127	147	129
February	94	103	127	145	129
March	89	102	122	137	122
April	83	98	121	133	117

New Machinery *and* Processes

Verge-Plate Grinding Machine

FOR the resurfacing of verge plates, a new grinding machine has been developed by the Central Machine Works, Asheboro, N. C. The device is



Machine for truing up verge-plate surfaces

being sold by Russell Parks, Asheboro, N. C.

It is pointed out that if the verge plate becomes worn and uneven, an unevenly knitted fabric will result. The remedy is either replacement or resurfacing, and it is declared that this machine performs the latter function in a satisfactory manner.

The machine is a special-purpose surface grinder, having a jig on a traveling table for holding the blades under the cup-shaped grinding wheel. This cable traverses automatically over the length of the verge plate, and the wheel is set against the worn plate until it is ground to a true surface. The machine is 2 ft. high and is driven by a 110-volt a.c. motor, the whole weighing approximately 150 lb.

Perfumed Hosiery-Finishing

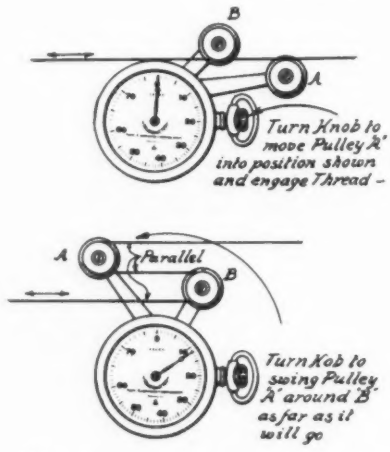
TO PROVIDE a new sales appeal which will enable the manufacturer to obtain more profit on his production, E. F. Houghton & Co., Third, American and Somerset Streets, Philadelphia, Pa., has developed a new perfumed finishing oil known as Del-Odor.

Del-Odor is dissolved in the last rinse after dyeing and imparts, to the hosiery, a fragrant, lasting perfume which, it is declared, will not be driven off in boarding or be lost if the hose are kept in stock for several weeks before sale. It is asserted that the operation is inexpensive, as it does not add any time or labor to the regular finishing operation; and the cost of the product is less than two cents per dozen pairs of hose.

Yarn Tensometer

TO eliminate streaks, shiners, filling bunches, and numerous other defects due to faulty tension on the yarn, a compact instrument known as the tensometer has been developed by Sipp-Eastwood Corp., Keen and Summer Sts., Paterson, N. J.

With this device, it is declared, the tension on the warper, winder, and quiller can be quickly and easily determined. The yarn is threaded through the wheels on the instrument as shown, and the amount of the tension is read directly from the indicating dial. In order to secure uniform and correct tension on all the ends it is only necessary to measure the tension on an end which is running satisfactorily and then to adjust the other ends to conform with this.


B
A
Turn Knob to move Pulley A into position shown and engage Thread
A
Parallel
B
Turn Knob to swing Pulley A around B as far as it will go

The Tensometer in action, with instructions for its use.

Compactness is one of the outstanding features of the tensometer. It measures only 2 in. across and can be placed in the vest pocket. The scale records the tension in grams, and the capacity is 75 grams.

Steam Traps

HIGH capacity and simplicity are the features of the new free-floating-lever steam traps developed by the Armstrong Machine Works, Three Rivers, Mich. This new trap employs the inverted bucket principle.

In the illustration, the pencil points to the valve lever which loops over two guide posts at one end and engages the bucket hook at the other.

Stainless-steel wearing parts and only two moving parts are said to insure low maintenance costs. The new traps are furnished in cast semi-steel for buckets up to 250 lb. In the forged steel pattern, the traps are available for 600-, 900-, and 1,500-lb. pressure service with

High capacity steam trap

any degree of superheat. In addition to these models, the new line includes compound traps for handling large volumes of water at any pressure and special traps for pulsating pressure conditions.

Automatic Starting Clutch

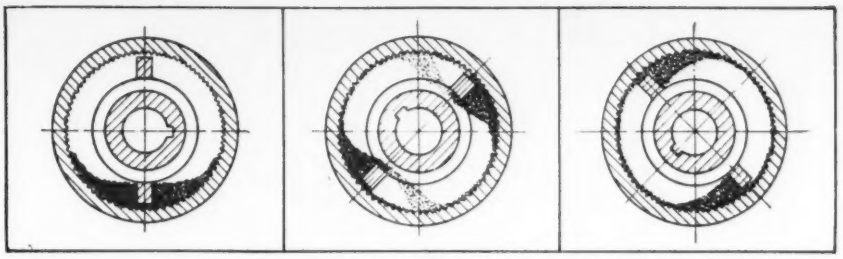
TO MEET the demand for an automatic starting clutch which would permit the driving motor, or other prime mover, to come up to speed without load, and also to give protection against overload shock, the Ramsey-Pulvis clutch is now offered by the Ramsey Chain Co., Albany, N. Y.

The pulvis principle, which is employed, consists of the gradual transmission of power by centrifugally increasing density of hardened steel shot against driving and driven elements of the clutch. This clutch can be made as part of the driving member of the industrial drive, such as silent or roller

chain, flat belt, multi V-belt, and all-gear types, or as a coupling on direct-connected drives.

The clutch permits the driving motor to come up to speed in a no-load condition and then enables the driven element to accelerate gradually until it attains the same speed as the driver. The rate at which the driven element is brought up to speed depends upon the amount of the shot, which may be altered to give different starting characteristics. It is declared that any capacity up to 400 hp. at 200 r.p.m. can be handled by a clutch of the proper size.

One of the advantages claimed for the device is that if the driven machine is loaded beyond the point where the shot can transmit the torque on the driving machine, slippage occurs within the shot, thus maintaining a balance between the torque and the moment.



Rotor and shell at rest; shot at bottom of shell

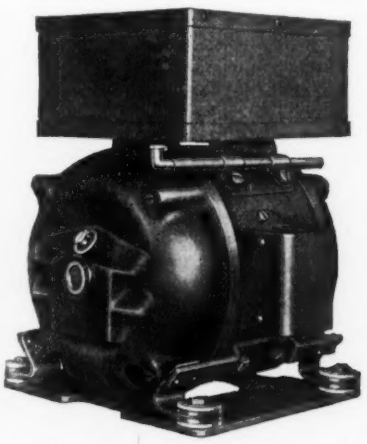
Rotor at full speed; shell being started by the shot

Shell and rotor at full speed in synchronism with each other

Clutch which permits prime mover to come up to speed without load

Capacitator Motors

CAPACITATOR motors recently brought out by Century Electric Co., St. Louis, Mo., are offered in sizes from ½ to 10 hp., furnished for single or multi-speed operation with normal



Small-size capacitator motor with box mounted on top

torque, high torque, or low torque characteristics to meet the requirements of each application. The small sizes have the capacitator box mounted on the top of the motor, although the boxes can be furnished for wall mounting.

Processing Compounds

ANNOUNCEMENT of four new products for the processing of textiles is made by Melrose Chemical Co., Melrose, Mass.

Melco voile gum is a special product developed for the finishing of cotton and rayon voiles, scrims, and marquisettes, especially where the new "sandy feel" is required.

Melco Scourall is a scouring assistant for wool, worsted, and cotton and is declared to be a valuable aid in boiling off rayons and synthetic fibers.

Melco CNA delusterant is a compound having the two-fold purpose of delustering rayon and other synthetic fibers, and also of acting as a finish where softness and body are required.

Melco tinting blue is a product made especially for bleacheries that require a bluing to secure a good white that does not change under artificial light and is fast to light and washing.

High-Range Manometer

FOR the purpose of checking the accuracy of recording flow meters, the Meriam Co., Cleveland, Ohio, has placed upon the market a light, portable instrument, known as the high-range, model 391 manometer.

This instrument has a steel frame, stainless-steel gland packers, plate-glass cover, and is tested to 1,000-lb. hydraulic pressure. The standard instrument is 42 in. high, 6 in. deep, 4½ in. wide, and weighs approximately 20 lb. Special instruments of any length and for higher pressures can be supplied.

Improved Oil Seal

FOR the purpose of retaining grease and oil in anti-friction bearings and keeping out grit, dirt, and water, a new oil seal has been developed by Aetna Ball Bearing Mfg. Co., Chicago, Ill.

The Aetna oil seal consists of only four parts and is described as a self-contained and complete unit which can be slipped in or out of position with nothing to work loose or become lost.

The thermo-pneumatic seal cushion consists of specially treated cork in which the interstices or air cells are captivated and hermetically sealed. It is declared that this pneumatic seal cushion automatically expands and contracts laterally with changing temperature of shaft or lubricant. The outside diameter is declared to be ground to an accuracy commensurate with that of anti-friction bearings.

Showing construction of improved oil seal

Auxiliary-Actuated Pressure Controller

DEVELOPMENT of the series 4200 Wizard pilot unit which involves a new design that includes the pilot valve as an integral part of the main-valve top work is announced by Fisher Governor Co., Marshalltown, Iowa. This unit utilizes auxiliary air or gas as an operating medium and is suitable

Pressure controller of new design

for pressure conditions of 5 lb. and up.

It is declared that the unit is easily converted from a pressure reducing valve to a pressure release valve. It is furnished complete with a small auxiliary regulator and with a pressure gage. Elimination of time lag is said to have been effected.

Relay Pressure Valve

DEVELOPMENT of a relay pressure valve, known as the style G, which is designed to give accurate pressure control of steam, water, or gas lines, is announced by the Bailey Meter Co., Cleveland, Ohio.

The valve is said to control the pressure within close limits by regulating the movement of a sylphon-operated or piston-operated throttle valve installed in the line in which the pressure is to be controlled. A minute change in the control pressure will result in a relatively large change in the motor pressure.

Questions . . . *and* Answers

Warping Speeds for Narrow-Fabric Work

Technical Editor:

If you can obtain it for me, I should like to have the following information regarding the manufacture of narrow woven fabrics: How many yards per minute does the average mill run its warper in drawing from rotating dyed packages, paper tubes, or spools? What percentage of the theoretical production does the actual production average on this operation? In cases where mills use long dyed chains, at how many yards per minute do they run their beamer? What percentage of the theoretical production does the actual production average on this operation? If they run from section beams to loom beams after long-chain beaming, at how many yards per minute do they run? What percentage of the theoretical production does the actual production average on this operation?

(7889)

Excepting in the case of high-speed warpers, the average speed at which the average mill runs its warpers in drawing from rotating dyed packages is probably 50 yd. per min.; and this speed remains constant, even as the warp builds up. The actual production will, of course, depend considerably upon the size and type of the yarn, the quality of the spooling, the efficiency of the operator, etc.; but a fair average, allowing for tieing in, piecing up broken ends, etc., would be about 70%.

It is impossible to make any reliable statement in terms of yards per minute regarding the speed of long-chain beamers, as the speed of these machines varies as the warp builds up, and much depends upon the method of the operator. Of two operators working side by side, one might run his machine quite fast, and the other run his machine at only a fraction of the speed of the first operator; and yet the second operator might easily turn out a greater production. A good average output for beamers running from long-dyed chains is 2,000 yd. per hour.

Running from section beams to loom beams is a drawing operation in which the "pulling" is done by the loom beams; and, as these beams are driven by a positive drive, naturally the speed of the yarn would gradually increase as the warp builds up unless some means for controlling it was devised. This is effected by a slipping clutch; and because of this variation in speed, it is, of course, impossible to give any definite figures for yards per minute.

▼

Spots in Hose From Improper Cleaning of Dye Machine

Technical Editor:

We are enclosing herewith two stockings which are spotted. This condition does not appear in every run. On the contrary it has appeared only recently and seldom occurs. Our gray goods are unusually clean; and therefore we do not scour before degumming. We are enclosing a gray stocking with similar spots, which resemble those in the finished goods. However, we do not believe this to be the cause.

Our dyeing equipment consists of one 25-lb. machine, two 50-lb. machines, and one 100-lb. machine, rotary type. So far the defect has appeared only in the 50-lb. machine. In dyeing we place 2 doz. hose in a light, cheese-cloth bag, and usually run 72 doz. or 56 lb. to the lot. The one-bath method of dyeing is employed. Goods are entered at a boil with 12% of a degumming agent, allowed to run about 5 min., and the dyestuff is added. After the dye is added, the batch is run at least 30 min., or until the gum is removed sufficiently for even penetration, then salted, and sampled 25 min. later. Two cold rinses are employed, and in a third is added 1% of British gum.

The green color on the gray stocking is fugitive color used in marking the legs after knitting. A uniform needle oil is used throughout the plant, one which we have been using for two years. Throwing is done by a commission throwster, and cones are conditioned 6 hr. before knitting. Plain distilled water is used in machine troughs. We shall appreciate your opinion as to the cause of these spots.

(7892)

We believe that the spots are caused by improper cleaning of the machine in which the hosiery was dyed.

In dyeing hosiery, impurities, caused by remnants of broken soap, oils, delustering agents and sizing, will gather, float, and attach themselves to the sides of the machine above the surface of the bath, on gears, and in cracks. At the conclusion of processing a lot, the machine should be thoroughly cleaned. Not only should it be boiled out with soap and soda, but the dirt and grease must be removed with a broom, brush, or rag. Otherwise, when the next lot is being dyed, the agitation of the bath removes this accumulated dirt and grease, which disperses in fine particles and permeates through the bags and onto the goods.

It is also possible that the spots may have been caused by broken soap or degumming oil which was not properly washed out of the goods. In cases of this kind, the spots are produced in the dyeing bath and are difficult to prevent except by a thorough emulsification of the broken-soap pellets so that they can be washed out completely. It is also quite possible that some sizing used in finishing the hosiery has broken up in the finishing bath, impregnating the hosiery.

We have inspected the hosiery in the gray; and while we detected some specks in it, they cannot possibly be connected with the trouble you are having. Upon dissecting the piece where these specks show and later washing them, the specks completely disappeared. The color splashes were also found to be of fugitive dye and not likely to cause any trouble, provided the goods are cleaned thoroughly before being placed in the dye-bath.

▼

Carbonizing Woolen Yarn

Technical Editor:

I should like to have you give me some information about carbonizing woolen yarn. Do you recommend treating the yarn with acid in the same tank in which the yarn is washed and rinsed? Will it work satisfactorily to leave the yarn linked for carbonizing? Kindly state the amount of sulphuric acid that should be used for 50 gal. of water. Will yarn carbonize satisfactorily if allowed to dry slowly, and will it do any harm to leave the acid on the yarn for a day and then wash the next day?

(7867)

We do not recommend the carbonizing of yarn in the same tank in which the yarn is washed and rinsed. While this is possible, great care would have

to be used in disposing of any residual soap used in the scouring solution. The acid would precipitate the fatty acids from the soap and discolor the yarn. It is better to use a separate tank, although with care the same tank can be used.

The yarn can be left linked for the carbonizing, provided satisfactory means are used to effect complete penetration of the yarn by the carbonizing solution.

Depending on the character of vegetable matter to be removed from the yarn, a solution of from 2 to 5% of sulphuric acid will be required. For 50 gallons of water 9 lb. of 66° sulphuric acid, will give about 2% solution to the 50 gallons; and correspondingly, 22½ lb. will give 5% solution.

Carbonizing should be effected by drying the yarn and subjecting it to a heat not to exceed 200°F. The amount of heat and the time used bear some relation to each other. After the yarn is dried 5 to 10 min., exposure to a heat of 200°F. will effect complete carbonization of even the most resistant vegetable matter. If a much lower temperature is used, say 110°, then a considerable longer time has to be employed. We doubt if yarn would carbonize satisfactorily if allowed to dry slowly, as too long a time would be involved. It all depends on the resistance of the vegetable matter being removed.

In general it is not desirable to leave acid on the yarn at all, but a day's wait would not make very much difference.

▼

Ondule-Warp Voile

Technical Editor:

I am inclosing a small swatch of ondule-warp voile similar to that shown in Fig. 1 under Question No. 7855 in your issue of April 30, 1932. I am outlining below the method by which I have obtained this result, as I believe it would prove of interest.

To begin with, I shall say that it is a costly fabric to produce, due to the high cost of the reed, which ranges from $34 to $40 depending upon the number of dents per inch. The weaving itself is not exceedingly difficult after the loom and reed are set up in good working order.

The depth of the reed is about 7 or 7½ in., and it must be made rigid enough to withstand the beat-up of the filling on the ends of the reed, as no reed cap is used. The reed works up and down in two slotted guides which are fitted into the lay of the loom near the lay sword. In order to allow the reed to respond to the up and down motion, it is also necessary to cut a slot from guide to guide through the lay in back of the race plate.

Starting with the bottom half of the reed facing the fel of the cloth, it is held in this position for as many picks as desired (28 in the sample), care being taken that the proper set of doups are weaving leno in order to bind the warp threads on the inside edge of the open effect. Then the reed is ready to change position from the bottom half to the top half. This can

Ondule-Warp Voile

be accomplished by hooks attached to the bottom of the reed and connected to a harness lever on the dobby. After 28 picks more have been inserted, the harness lever is lowered, and the reed is pulled up by springs attached to the top of the reed and fastened to an overhead bracket which is secured to the lay sword. This gives one repeat of the pattern.

The harness lever is used to pull the reed down by extending a cord over each shaft, down through the warp yarn in back of the harnesses, under two pulleys fastened to the floor, and then up to the two hooks fastened to the bottom of the reed.

Two sets of doups are necessary for the binding thread, as in the pattern one set must be working plain weave, while the other set is weaving leno. It will be noted that doups are necessary for only the leno threads, the other threads being drawn through the regular harnesses. MILTON DUXBURY.

▼

Wool-Scouring Problems

Technical Editor:

We are scouring the identical fine Texas wool in two different plants. You will note from the inclosed samples that the product of one plant is much whiter than the other. We shall appreciate your advice as to the cause of this difference (7871)

The various factors which enter into the study of this problem are the quality of water, type of materials and equipment used, and processing methods. It is assumed that there is adequate supervision at both plants and that the condition referred to is not temporary but is one which exists most of the time.

Water is an important factor, and analyses of the supply for each mill should be made. At this time of the year, in the flood season, there are often difficulties which disappear later as the volume and character of the water change. Some waters, particularly from artificial reservoirs, have a distinct yellowish cast arising from organic matter. With such water, it is often difficult to obtain satisfactory results. On the other hand, some scouring plants use water from a stream which, at first glance, would appear to be anything but satisfactory, and yet they secure fair results. If the water is hard, either with temporary or permanent hardness, the conditions are very much more difficult to overcome. A hard water must either be pretreated before its use, or the first scouring bowl should contain nothing but water and soda. If soap is used in the first bowl, there is danger of subsequent discoloration of the wool.

The ordinary scouring materials are soap and soda ash. For a heavy-shrinkage Texas wool, a soap with a low titer fatty base is usually employed. Unless both mills are using the same kind of soap, it is possible that this may be the answer to your problem.

The equipment in the two mills should be compared, as it is obviously unfair to compare the product of a scouring plant which has a three-bowl machine with another one which may be equipped with a five-bowl machine. If all of the foregoing factors are comparable, the problem narrows down to the method of scouring. To obtain the best results, a scouring machine must have constant attention, and this is a matter in charge of the scouring foreman. He must constantly observe the product of each bowl, adding soap or soda, regulating the temperature of the water, etc., as needed.

A further point is the pumping of the liquors. It is customary to pump some portion of the scouring liquors from the cleaner bowls back through the other bowls and then to discharge the dirty scouring liquor into the sewage-disposal plant. If this operation is not correctly controlled, it is obvious that poor work will result. Another important factor is the control of temperature; and in general the most work should be done in the first bowl. Adjustment of squeeze rolls, etc., must also be looked into.

Proper rinsing of the wool is also important, and it may be that one mill is employing a small amount of bluing in the rinse liquor, thus producing an artificial whiteness which some scouring mills like but which has no particular significance. Even if the products of the scouring bowls from the two plants are much alike, further change can come in the drying operations. If too high a temperature is used, yellow wool is bound to result.

Inquiries should give the fullest information possible; and if damaged material is involved, a sample should be sent. We give no consideration to anonymous inquiries and do not undertake routine analysis of yarn or fabric, or investigation involving unusual expense.

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◆ *Survey of Fabric, Knit Goods, Yarn and Raw Material Markets* ◆

TEXTILE WORLD ANALYST

Curtailment Best When Used as Sales Weapon, Blanket Trade Finds

◆

Constructive merchandising of all-wool and part-wool blankets, with the regulation of production to prevent unsold stocks accumulating, is making progress. Other branches of the industry might find an object lesson in the attempt of blanket manufacturers to make curtailment of production yield its compensation in prices that will permit profitable operations. Retailers have delayed their purchases, but this has not weakened the stand of blanket mills in their merchandising program.

SILENT spindles and idle looms are not likely to inspire optimistic thinking by textile manufacturers but now, as never before, is the time to have courage in the face of difficult conditions. Summer weather brings its usual slowing up of production in all lines, except seasonal items such as bathing suits and light-weight underwear. This year, however, the industry is experiencing the most drastic general curtailment of operations it has suffered in a generation. Moreover, there is nothing in the present outlook that would indicate an improvement in the demand for textile products sufficient to justify substantially increased plant operations before several weeks, or possibly months, have passed.

Curtailment of output is generally regarded as a defensive measure that would not be adopted except in extreme situations. An evidence of the correctness of this assumption has been the reluctance of many textile executives to admit the need for regulation of production until they found it impossible to sell *their own* goods except at an actual loss. It is high time the industry attempted to employ the curtailment of production as an aggressive sales weapon against buying pressure that forces prices below replacement costs. In many instances during the last several years the advantages of curtailment programs have been largely thrown away in the market because the mills were not alert to the constructive merchandising opportunities that their curtailment offered. This year every effort should be made to "follow-through" and obtain some compensation for the sacrifices involved in regulating production.

The merchandising program of the blanket industry is now being subjected to the acid test and, according to current reports, it is standing up remarkably well under the fire directed against it by large department stores and other high-volume retail outlets. The buyers for large retail distributors have purchased comparatively few blankets for late summer or fall deliveries, but blanket mills are holding fast to prices that were placed in effect on April 2 and 4, and with possibly one or two exceptions, no blanket mills are being operated except upon actual orders. Retail buyers are apprehensive that some compromise on the part of the mills as the season draws closer, may give advantage to those who wait and they are therefore delaying their purchases until the last minute, in the meantime depending upon stocks carried over from last season for their mid-summer offerings.

Large department store buyers resent the blanket mills' policy in asking of them a 5% differential over prices quoted to jobbing houses, basing their objections upon the contention that price differentials should be determined upon the basis of quantities purchased. Some buyers have voiced their criticism of the price advances which became effective about the first of April. These price increases, amounting to only 5% in the case of all-wool blankets and from 5 to 8c. per pair on part-wool numbers, were explained by the blanket manufacturers as being necessary in the light of advances in raw material prices and the unusual lateness of the blanket season which naturally would impose a higher overhead cost upon merchandise sold during the rest of the season.

Available data indicates that part-wool blanket mills are being operated at only 30 to 35% of full-time capacity, while the all-wool blanket producers have run their machinery correspondingly less since the beginning of the year. With the buying movement delayed until mid-summer or later, there is some question as to whether blanket mills will be able to make adequate deliveries when the retailers finally order their goods, should retail sales begin to approach normal proportion this fall. The volume of retail sales that may be expected in blankets this year is subject to two very elusive factors: weather conditions and consumer buying power.

Every textile manufacturer, whether in the blanket business or some other line, is trying to determine the future trend in consumer buying power. This important factor will decide the long-time rate of production in the industry and influence the operating policies of large and small manufacturers alike. Convinced that consumer demand will not be sufficient to absorb the full-time production of present equipment in their branch of the industry for quite a long time, several manufacturing concerns have announced plans for complete shutdowns of certain mill units in their organizations either for an indefinite period of time or permanently. Manville-Jenckes Co., American Woolen Co., Pacific Mills, and other large companies have already embarked upon such a policy, or else have announced their intention of so doing. Many other individual concerns have closed down for one month, two months, or an indefinite period, depending upon market conditions in their lines.

Manufacturers should emphasize to the trade the significance of this actual shrinkage in the capacity of the division of the industry in which they operate. Furthermore, it should be demonstrated that curtailment programs are being followed more rigidly than in the past, in order that a psychology of stability can be developed in the market. To this end the blanket manufacturers are setting an excellent example for the rest of the industry and it is likely that retail buyers, rather than adopting an antagonistic attitude, will eventually appreciate the constructive features of the blanket merchandising program — particularly when they find that the blanket mills are not going to pile up unsold stocks creating a price condition so unstable as to make all buying a speculation.

The merchandising discussion which appears regularly on this page considers various branches of the textile industry from week to week. It analyzes significant marketing trends or developments in those branches. While it covers current movements, its conclusions concern potential future significance of those movements, rather than the effect of temporary fluctuations in trade sentiment.

Extra profit in crepes lie in the yarn...

Your crepe fabrics will sell to a certain extent, no matter what yarn you use. But your real profits are in the extra margin of sales, in the difference between just a fabric, and a popular, fast-selling number.

Your ultimate crepe sales can be traced to the shopper who fingers two or three fabrics, and picks the one with the true crepe feel. Quissett crepe yarns give your fabrics the pleasing ripple, the true attractive crepe feel and appearance, because they are exactly right in twist. Users of Quissett Yarn will tell you that you can't match Quissett for accurate twist, that the yarn comes through with the twist you specified, and that the fabric comes off the loom with good promise of a profitable seller.

Quissett is ready to supply you on short notice with cotton crepe yarns in all plys and put-ups, up to 120s. Also spun rayon crepe yarns. Bring your crepes up to the ranks of best-sellers with Quissett Yarns. Write for your samples.

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Yarns Quiet; Prices Still Erratic

THERE is little new reported in cotton yarns this week. Demand continues quiet. Some little improvement is reported in knitting yarns for heavyweight underwear, but this is scattered and usually for small quantities. Dealers say the market looks better than it is, by contrast with the previous extreme quiet. Better specifications are noted in certain quarters and such houses state their May billings are going to compare favorably, but there are others who declare it will be one of their poorest months.

Yarn prices continue erratic due to sales efforts on the part of certain factors. However, many dealers refuse to consider some of the low offers and endeavor to convince buyers of the fallacy of the supposed advantages of a declining market. They also point to the increasing number of spinners who are planning to close their mills until business gets back on a fairer basis, in addition to those who have already shut down. It is interesting to note that power companies in North Carolina have announced that they will waive the usual minimum service charge for power during June, July and August. Bills will be rendered merely for actual current consumed. This policy will encourage still more mills to shut down if they are unable to book business at a fair price, as they no longer have to consider the fixed charges for current whether used or not. Many factors freely express the opinion that a complete shutting down would have a stimulating and beneficial effect.

Knitting yarns are receiving most of the limited attention today. As previously stated, heavyweight underwear mills have been taking in yarns more regularly than for some weeks, and small new business is also reported. Several dealers state 10s framespun can be secured at 11½c., but others declare they have been unable to find anything less than 12c., with 18s at 13½ to 14c.; average 30s are noted at 17½ to 18½c., while tying-in yarns are noted as low as 16½c.

Carded weaving yarns are very quiet. While some spinners are still quoting 13½c. for 20s-2 warps, the average quotation is nearer 14c. One inquiry for prices on 30s-2 warps brought quotations from spinners ranging from 17½ to 19½c.

Combed yarns are quiet with limited demand. Deliveries have shown moderate improvement, although some state they are not as satisfactory as in carded yarns. Lightweight underwear is reported slow. Prices are rather easy with 18s as low as 18½c., but average quotations run 19 to 20c. Mercerized yarns meet very limited spot business. Deliveries continue in fair volume. Quotations are holding fairly well to prices listed on page 82 from leading processors for standard grades. The outlook is regarded as more promising.

◆Cotton Is Steady During Quiet Week

THERE was nothing in the action of the cotton market during the week to indicate that the cotton trade was getting any particular inspiration from the general news or any nearer a firm opinion as to the probable end-season trend of values. There was covering and trade buying on the declines, but evidently much hesitation with reference to following up advances, while the bulges have met liquidation together with some scattered selling, supposedly including a little hedging by southern mills against stocks of raw material or goods. There also appears to have been a little buying on the declines, based chiefly upon the low level of prices, but in a general way so far as making forward commitments is concerned, there seems a disposition to await further developments and particularly for constructive action by Congress on the tax bill or other legislative uncertainties.

The weather has not been too good for germination, nor unfavorable enough to cause anything more than passing anxiety as to the start of the crop. Recent complaints of dry soil conditions have been practically eliminated with the possibility that recent rains in the Southwest were rather excessive and that there may have been a little more rain than desirable in south central sections. The weekly report of the Weather Bureau said that cotton needed higher

(Continued on page 77)

Market Briefs

Cotton: Absence of new influences leaves market steady.
Cotton Yarns: Spinners will close rather than cut prices further.
Cotton Goods: Hope for statistical improvement in May.
Wool: Dealers call market steadier though still dull.
Worsted Yarns: Sharp resistance to further price cutting.
Woolen Goods: Good spot call; prices weak.
Silk: Prices unchanged despite lull.
Silk Yarns: Knitters buy spun silk; thrown yarn quiet.
Silk Goods: See velvets big for fall; printed sheers clearing.
Rayon: Shutdown plan cheers market.
Knit Goods: Mesh hosiery prices firmer; underwear mills selling ahead; belated swimsuit rush starts.

◆Worsted Yarns See Signs for Hope

NO important developments have yet appeared in worsted yarns. Demand for new business continues in small volume. Specifications for knitting yarns are restricted. Spinners therefore are finding it difficult to maintain their plants on satisfactory schedule. Reports are heard of several planning to close down until the market finds itself on a proper price basis. The occurrence might easily be a blessing in disguise. The same thought applies to curtailment of consuming mills, especially weaving plants, according to many leading factors. Curtailment would go far toward stabilizing the market, it is argued.

The efforts to stabilize raw wool are being watched with keen interest. There is a feeling that the movement would be far more effective if it started with wool manufacturers and spinners. Yarn dealers are endeavoring to point out to their customers that every time a buyer beats down his yarn prices, he cheapens his own market, which is also made unstable by erratic raw material costs, making it difficult or impossible for him to sell his goods at a profit, while at the same time his competitor pursuing the same tactics may secure his yarns at still lower figures.

Lower qualities in yarns are offered in order to meet lower prices. Spinners who may have sold a stock lot at a sacrifice to clean it out, are certainly not going to use the same grade of wool to make up any further lots of yarn. Consequently quality of merchandise suffers and the yarn user is penalized by dissatisfied customers and returns.

An example of the wild stories repeated by buyers to secure concessions is found in the report of an offering of a lot of dyed yarn to a swim-suit mill. This was said to be a slub-dyed yarn, but eventually proved to be a lot of mixtures which has been made up in a count for sweaters and was not suitable at all for bathing suits. However, the low figure named in the offering was used extensively in an effort to lower prices for swim suit yarns. This incident shows the foolishness of accepting every statement made regarding the price situation.

While yarn production and sales are now at rather low ebb, there is a feeling that the summer will produce a more satisfactory volume of business. Demand for yarns for infants' wear is expected to develop in July and August. While swim suit yarns have not produced the volume hoped for, there is still a feeling the early summer may see some belated rush business.

Weaving yarns continue dull. Since few goods were made this last season,

STANDARD-COOSA-THATCHER

Durene

Mesh, Fancy Stitch, or Plain —

STANDARD-COOSA-THATCHER Durene will do a better job for you, —because uniformity of quality is a fundamental of Standard-Coosa-Thatcher Durene . . .

- Evenness of Thread
- Accuracy of Count
- in well-wound packages

Samples on Request

STANDARD-COOSA-THATCHER COMPANY

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Executive and Sales Offices: Lafayette Building, Philadelphia, Pa.

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there arises offer hope that the coming season will find activity to make up the gap. Dress goods mills are sampling in fancy mixes of all kinds with woolen yarns prominently featured.

◆Wools Nearing A Stable Basis

WOOLS continue dull with outlook obscured by general unsettlement of business. Many raw materials, including wool, have reached new lows and in the case of wool below-cost values have been ineffectual in stimulating manufacturing demand which is held firmly in check by the slow, small and profitless business offered by the goods market. Recent inquiries for wool, while they have not resulted in any substantial volume of business, have tended to give the market a somewhat better tone.

Dealers believe the long decline is about ended and that just as soon as this becomes recognized, mills will begin to take over substantial quantities. The drift in prices during the last 12 months has been steadily downward.

Territory Wools Dull

Movement in territory wools has been exceedingly restricted and although there is some gain in confidence regarding wool values, there has been little or nothing doing to afford any immediate support to the market. In fleece wools, the situation is unchanged from a week ago. A limited amount of sampling has been done on quarter-blood and three-eighths-blood fleeces from the new clip. The demand for delaine is positively stagnant. Lack of mill interest noticeable in worsted wools, is less so in pulled and scoured wools for the woolen division of manufacturing. Prices are in favor of the buyer, yet the market as a whole is less easy than it was at the beginning of the month and resistance is stiffening to low bids made by mills. Scattered sales of small lots of scoured pulled wools have occurred at irregular prices.

Imports of clothing wools for January-March made a gain of 1,353,000 lb. over a similar period in 1931. Wools from South Africa showed an increase of 831,000 lb. but Australian imports declined 279,000 lb. There were no imports of clothing wools from New Zealand and South America during this period. Wools imported on the skin, washed, sorted, and scoured showed an increase over the corresponding period of last year of 873,000 lb.

In Bradford, England, 64s warp top at 21d. is now at the low point of the year. The American top market continues in a waiting attitude with stocks larger than dealers would prefer.

◆Substitute Prices Grounding on Bottom

PRICES on most wool rags are apparently grounding on bottom and yet the white stocks are none too firm, owing to further easiness in wool values and the markets in noils and mill wastes tending more in the buyers' favor. Some graders are willing to sell their small supplies of white knits as low as 16½c., with white softs 1c. below this quotation. There is some call for fine imported underwear clippings, the value at present being 37 to 39c., with a grade said to be the domestic equivalent of the imported stock offered at 35c. Total United States imports of white clips for the first quarter of this year amounted to 332,000 lb. at an average price of 21c., to which would have to be added a duty of 18c. Imports for the first quarter of last year were 429,000 lb. at an average value of 24c.

The output of white and colored worsted wastes is at the low point for many years, and, while quite undesirable from many angles, it nevertheless places holders of worsted wastes in a strong position statistically.

Confidence in noil volues is on the gain, and it is believed that current level of prices although higher than in the early part of the year when the mills bought extensively will not prove any obstacle in the way of a substantial turnover when business on dress goods, flannels, and similar fabrics begins to return to near normal. Noil output is now at the low point for several years.

◆Shutdown Prospects Strengthen Rayon

INTEREST in the rayon industry focused this week upon the prospect of a general shutdown of viscose process plans for the month of June, "or longer" following the lead of the Viscose Co., the largest producer of this yarn. Demand from weavers and knitters is declining steadily, and current orders are so light as to permit rapid accumulation of stocks in hands of producers, unless drastic steps toward curtailment were taken.

Reaction among rayon consuming industries to the shutdown prospect has been favorable on the whole. Buyers regard the step as helping toward stabilization of prices, and they view the fall prospects for rayon as much improved by the yarn industry's curtailment policy.

Reduction of operations by both weavers and knitters has caused these manufacturers to hold yarn orders down to the minimum. Even the rayon underwear division, which now enjoys a fairly good call, thanks to improved weather, is not disposed to accellerate output immediately, and the outlook at this end is uncertain. Prices are steadier, and both producers and buyers expect levels to hold firm indefinitely.

◆Fair Spun Silk Call; Thrown Yarns Quiet

MAY approached its close without bringing any improvement in the silk yarn industries. Throwsters announced further shutdowns of mills, and said demand for yarn was practically negligible. The flurry of interest shown by Paterson weavers earlier in the month has waned and it is difficult now to get commission business of any kind.

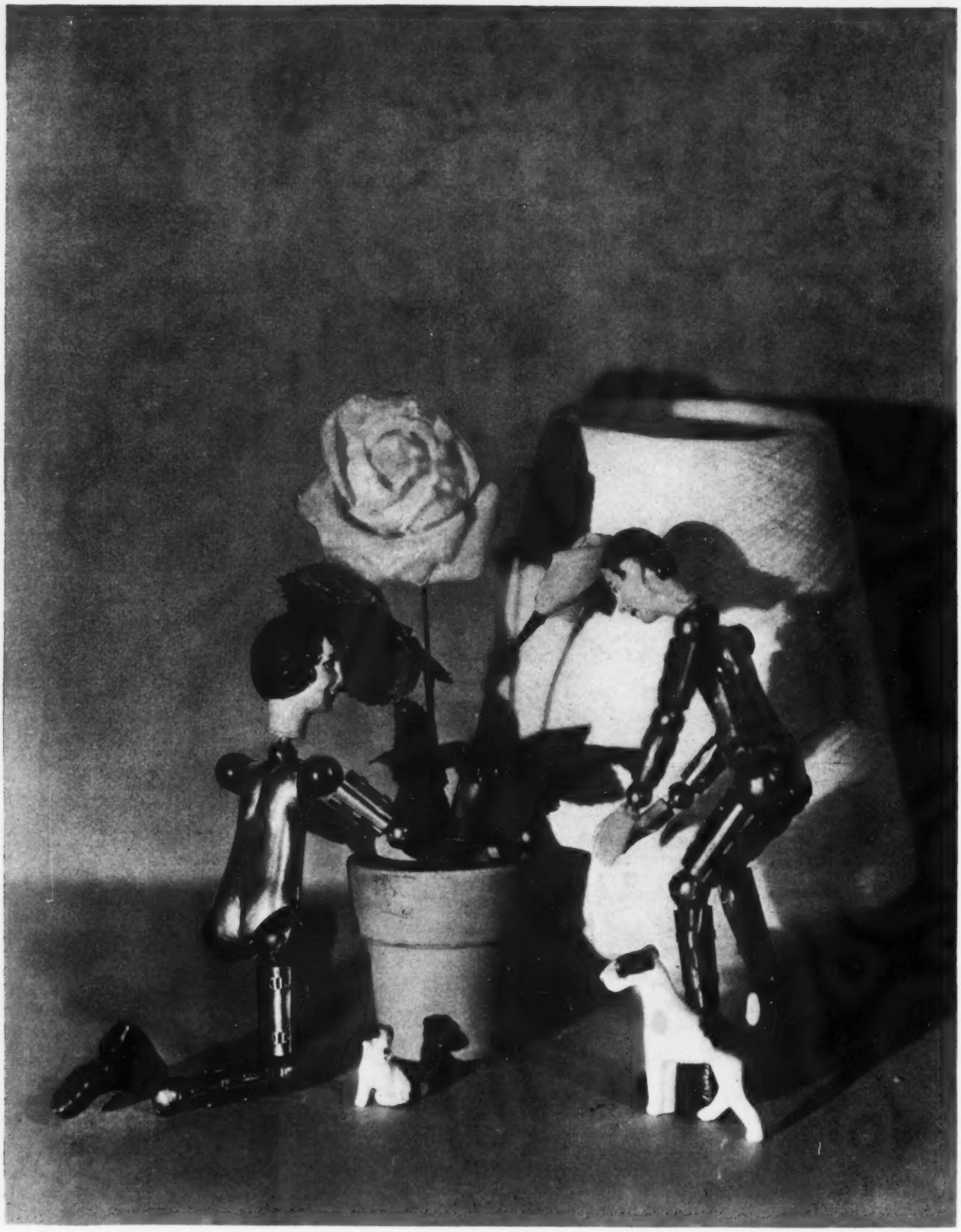
Spun silk mills were in slightly better position, thanks to active operation of knitted underwear mills making men's garments of spun yarn. A fair quantity of spot orders was placed with the spinners by these knitters, but response from other outlets was very poor. Weavers continue their policy of greatly restricted operation and are placing practically no business with spun silk houses. Yarn stocks in spinners' hands are light, and prices are unchanged from last week.

◆Raw Silk Weaker; Price Buying Prevails

RAW SILK demand in the New York market was sluggish throughout the final week of May. Business was confined to occasional spot orders of the bargain type, and coming mostly from broadsilk mills; prices suffered a 5–10c. drop. While June usually is light, except in new crop business, importers are hopeful that the month may be active in spot buying this year, due to the very low margin on which manufacturers are operating.

Negotiations for the new season's cocoons began this week in Yokohama, but up to time of going to press, no reliable reports regarding prices had been available. There is little news of appreciable curtailment in Japanese output this year, and importers are not optimistic on that point. However, political conditions in Japan are calmer which has steadied the yen, and raw silk quotations in Yokohama were comparatively firm when the week opened.

Indemnity silk deliveries are light; the distributors are evidently determined to withhold it from the market, pending improvement in American demand. There is already some 60,000 bales available in New York which is causing uneasiness, in view of the greatly restricted operations among silk-consuming industries.



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Offering: Unsurpassed **FINE COTTON YARNS** and **MERCERIZED YARNS** in all descriptions for every purpose

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FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Cottons Hope for Statistical Gains

WITH the month of May drawing to its close the cotton goods market has no new evidence that May will show itself any better than April. For the last three weeks new business in gray goods has been small, and the best that can be hoped for is that curtailment of production has been greater during May and that consequently the statistical position of the market will be improved. Mill men have been talking curtailment for many months, but it takes periods of crisis like last December and April to bring home to many of them the real common sense that exists in current demands that production be restrained.

Print cloths this week went back to their recent low price and 64x60s sold for 3c. Bids under that price were reported to have been turned down throughout the market. A flat price like 3c. seems a good point at which the market may entrench and stubbornly refuse to give another fraction. Time alone can tell whether 3c. is the bottom of the present movement but a hopeful factor is found in the slightly stronger cotton market. So long as the raw material remains steady, there is no excuse for further print cloth reductions except where reckless production has created a surplus that has to be liquidated at any cost. Spot sales of 4-yd., 80-squares were made at 4⅛c., but buyers' attempts to get summer deliveries at that figure failed with mills generally firm at ⅛c. higher. Carded broadcloths were quiet. Rumors of sales of 100x 60s at 4c. were in the market, but the generally accepted asking price was 4⅛.

In heavier lines of gray goods, sheetings were quiet, and only small sales were accomplished in drills. Quotations of 40-in., 2.85 yd., 48-squares ranged from 4¼ to 4⅜c., and in drills 37-in., 3-yd. goods were offered 4½ to 4⅝c. Cotton duck remained without much change with single filling, A grade, 8-oz. duck at 7¼ to 7½c.

Reports from the floor-covering market indicate that the new fall season in rugs has been started with fairly firm prices. This particular field is often used by cotton goods men as an index to what they may expect in the sale of cotton domestics. There are a number of merchants who quite definitely hope for improved trading next fall despite the fact that politicians and economists see very little for optimism in the near future. The argument of the hopeful ones is that abstension from volume-buying on the part of the ultimate consumer cannot go much further, and, despite reduced buying power, there must soon be considerable replacement. This is further supported by the fact that much of the buying which has been done in the last 18 months has been of low grade goods of short life.

The industry is much interested in the move for higher duty on jute which took form at the A.C.M.A. meeting at Atlanta last week. It is hoped that cotton materials may ultimately be substituted for a large part of the imported burlap now used in this country, aiding to a considerable extent the cotton farmer and the cotton manufacturing industry, without penalizing the burlap user since an equally serviceable fabric is offered him at nearly the burlap price.

◆Heat Spell Helps Clear Broadsilks

ATTENTION of broadsilk houses during the pre-holiday week was divided between clearing their shelves of remaining spring and summer printed sheers, and planning their fall lines. The definite turn toward warm weather brought new energy into the market; buyers still insisted on getting yard goods for "twice nothing," as one sales manager remarked, but when weavers made moderate reductions for clearance, they effected fair turnover.

Georgettes and the other lightweight prints have been moving spiritedly during the last ten days, and some leading houses expect to be completely rid of these designs by the middle of June. Clearance reductions are not so drastic as some had expected, partly because of previous curtailment and also because prices were already very low.

Fall plans are going ahead steadily, but manufacturers are more secretive than ever on that score, so it is unlikely much information will be disclosed beforehand. Indications are a few houses will show their fall lines at the end of June and other openings will carry over into mid-July. There is talk of a big transparent velvet season, and they are likely to feature new offerings.

◆Wool Goods Tone Shows Improvement

CURRENT trends in the woolen and worsted goods market indicate that the small mills are faring better in many cases than their larger competitors. This has been particularly noticeable in worsted suitings. Small suiting houses have been writing a fairly good advance business for July-August shipment on fancy suitings, and some of these mills are reported to be behind in deliveries. Contrasted with this, is the position of the large companies, which cannot get enough orders to keep their looms running. The explanation, of course, lies in the fact that those with the more economical overhead, are able to operate with very moderate volume.

Suiting demand for spot delivery is uncertain, but there is plenty of business for those who make drastic concessions. Low-grade suitings have moved fairly well; quality goods of summer weight are not wanted. Stocks of high quality fabrics for immediate use are low, the bulk of the surplus being in cheaper grades.

Approach of Decoration Day stimulated buying somewhat, and the week ended with weavers in considerably better mood. It is felt that June may bring improvement. Numerous large buyers were nibbling this week, and intimated they expected to place business on a good scale shortly. These firms have been holding back orders, pending retail improvement, and the warmer weather of recent weeks has placed retailers in a better mood to buy.

▸Macy's Laboratory Doubled To Meet New Quality Call

Tallying with the current consumer trend toward better quality merchandise, R. H. Macy & Co., New York department store, has doubled the scope and personnel of its testing laboratory. Textiles being a major, if not the dominant merchandise submitted for analysis, the store's new policy has particular significance to textile manufacturers who sell directly or indirectly to this extensive retail outlet. The store hereafter will test all items of merchandise which it promotes by newspaper, direct mail, radio or other advertising.

The laboratory is known as the Bureau of Standards and is in charge of Ephriam Freedman, well known chemist. During recent weeks, Mr. Freedman has expanded his organization and equipment to provide for the testing of even the minutest textile unit. Hosiery, broadgoods, apparel and house furnishings are among the chief lines which are analyzed before purchase. The store's textile testing equipment includes all the modern standard apparatus, and also numerous devices developed by Mr. Freedman and his staff. The laboratory works in close relationship with such textile manufacturers as sell direct, and often the technical reports of the bureau serve as valuable guides to the mills.

The new policy was announced by Macy's in consumer advertising which included a statement to the effect that "poor quality merchandise is being manufactured by mills under pressure from retailers," and added that the store believed such policy to be detrimental to the retail industry since it made for ill will.

THE DURENE NAME HELPS SELL THIS FINE NEW HOSIERY AND UNDERWEAR

The durene stamp or label helps sell fine merchandise because the name durene symbolizes a definite standard of quality. Durene is the cream of the cotton crop, mercerized for extra strength, elasticity, absorptiveness and durability. Retailers and store customers naturally prefer it.

The durene merchandise shown here is from the following distributors: boy's underwear, at left, above, Globe Knitting Works; at right, McLoughlin Textile Corp.; man's pullover shirt, Ware Valley Manufacturing Company, Inc.; hosiery, from left to right below — patterned golf stockings, Chas. Chipman's Sons Co., Inc.; men's socks, James Jamison & Co.; children's socks, Shreve & Adams, Inc.

Durene
THE FINEST COTTON
QUALITY BEGINS WITH THE YARN

DURENE ASSOCIATION OF AMERICA
250 FIFTH AVENUE, NEW YORK CITY

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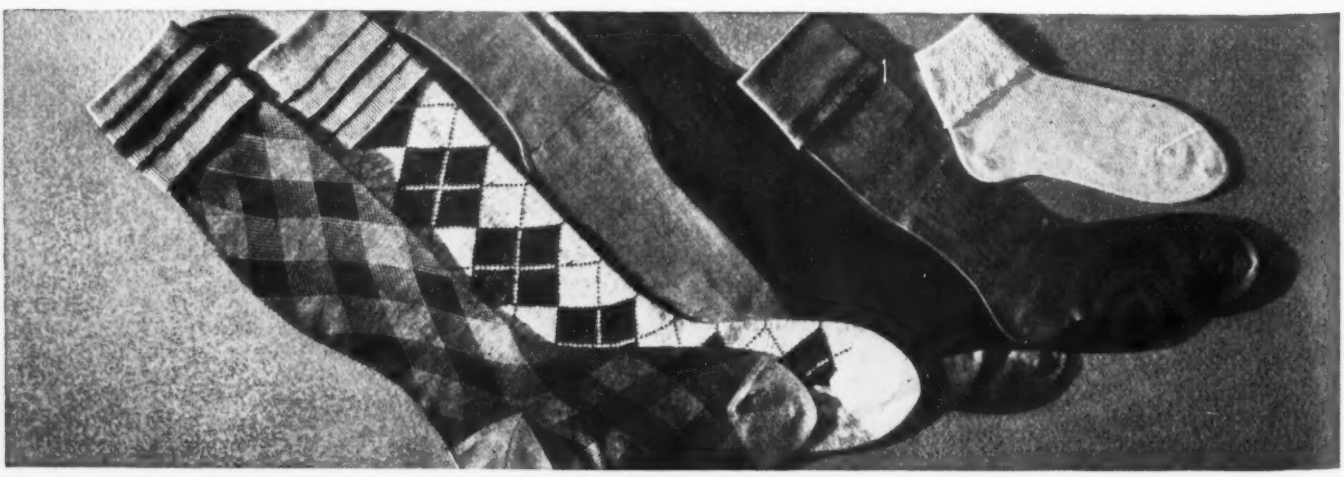


KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Quick Swimsuit Deliveries Asked

THE long-expected rush for swimsuits is now actively under way. With summer temperatures prevailing in the Eastern states for several days last week, buyers suddenly discovered they were wholly without stocks and immediately began a spirited call for merchandise which carried into the current week. The season being so advanced, it is now regarded as certain that orders will continue spirited. Manufacturers are receiving many requests for immediate shipment of merchandise scheduled for June and some duplicate business is coming in.

Swimsuit demand is mainly for staples and the more conservative of the new styles. In women's lines white is decidedly important—indeed, the stylist of a nationally known firm said white swimsuits for women were becoming a rage in the more fashionable districts.

The improved weather also helped other outerwear lines. Summerweight sweaters were in good demand, especially men's garments. Women's summer sweaters have been sluggish, and mills are at a loss to effect real turnover at that end.

Knitted ensembles, especially the ultra lightweight lines were moving actively, and prices held firm. Stocks in every division of the outerwear industry are low, and the price outlook is healthy. Indeed, with swimsuit stocks so meager, an advance in this division is far from improbable.

◆Hot Spell Aids Summer Underwear

JOBBERS and retailers show new interest in the summer underwear lines, and Worth Street has enjoyed fairly good movement during the last ten days. In men's goods, cotton shirts and shorts, athletic type, were the leading line, and some firms had difficulty in filling orders. One company was asking two to three weeks for deliveries on popular numbers. Stocks generally are very low in mills, and this has done much to improve price tone.

There was a general activity spread through all the lightweights, both men's and women's. Women's mesh garments continued important, especially in silk. Men's nainsooks, which had been backward and had been viewed by some knitters as through for the season, took a surprising jump. Numerous mills stopped making nainsooks with the result that there is only a very moderate supply now available. Buyers placed numerous contracts for this merchandise last week, at prices affording as good a margin as underwear mills have had anywhere this season.

Spot shipment is the rule, and in most cases mills are able to meet this requirement. While individually orders are small, they represent an attractive total, and manufacturers this week talked more optimistically than for some time past.

Distributors have had practically no summer underwear in stock, so that the present improvement in consumer demand brought a quick rush into market for merchandise.

The outlook for heavyweights is uncertain. Mills which withdrew their lines until June are manufacturing very cautiously, with the aim of carrying only minimum stocks into summer. Prospects point to sluggish movement of ribbed underwear through June and July, and a gradually increased demand in August.

◆Mesh Hosiery Call Shows Improvement

RISING temperatures brought a light improvement this week in the call for mesh full-fashioned hosiery, and plain full-fashioned lines also were declared to be moving steadily. Mesh price tone has firmed somewhat, but it will take a few more weeks of active buying to clear away the last signs of weakness.

It seems clear that the mesh reduction was entirely a liquidation proposition. The market editor learned this week of several firms which found themselves forced to cash in quickly on their stocks; among them was one firm that liquidated 20,000 dozen pairs of mesh within a very short time. Contrasted with this, is the fact that leading knitters are getting mesh hosiery orders for fall delivery from numerour large chain distributors.

Mesh demand is biggest in the lines retailing at a little over one dollar. It may be that the current hosiery price average is higher than generally believed; one estimate this week was that women's lines selling retail at $1.00 or above represent more than 50% of aggregate business.

Production of all lines, including seamless half-hose has been sharply reduced during the last four weeks, but now knitters are talking of increasing their output. One leading mill man believes early June sales will be so active as to justify increasing production to possibly 75% for the summer months.

Half-hose improved slightly thanks to the more favorable weather, and there was less distress pressure. Price continued a dominant factor in buying.

◆Raw Cotton Reports

(*Continued from page 71*)

temperatures especially in the eastern half of the belt but that the rains in the East were decidedly favorable and notwithstanding the cool weather, the outlook improved materially in the southeast. There was too much rain locally in East Gulf sections but damage to the crop was not excessive. In the Western Belt, conditions vary considerably, but in the main were rather favorable.

According to one of the prominent private crop reporting bureaus, a most favorable moisture conditions for rapid improvement in the crop now exists, while planting is nearly finished in the southern half of the belt and proceeding rapidly in the upper half. Weevils are doing some damage in the extreme southern part of the belt, but will do no important damage until the first generation reaches the egg-laying stage. Opinions as to the acreage still vary. Correspondents of a prominent cotton house still expect a decrease of approximately 7½% on the average, while a Memphis authority which expects to issue a preliminary estimate of the area under cultivation in the near future, says their advices heretofore have indicated an intention to reduce by 12½ to 17%. In local trade circles a reduction of about 10% or perhaps slightly less seems to be anticipated.

The Government's revised figures on last year's acreage and yields per acre did not show sufficient change as compared with the report of last December to have any particular effect on the market. They placed the acreage under cultivation July 1 last year at 41,189,000 acres, the area picked at 40,693,000, and the yield of lint cotton per acre at 201.2 lb. Forthcoming estimates of this year's acreage will, of course, compare with these revised figures.

◆Cotton Wastes in Listless Trading

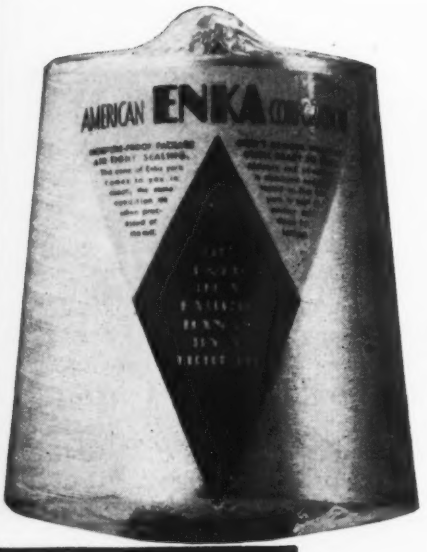
LITTLE activity has been noted in the cotton waste market during the last week. What demand there is has favored the spinnable wastes, with peeler comber still holding strong due to limited supplies. Actual sales have been so few in most grades of waste that market prices are largely nominal. Fortunately, not much pressure is being put on the market, dealers feeling that prices for most grades are already at a very low level and that nothing at all would be gained by further reductions.

There has been some call for thread wastes, but the general situation is brightened only by the peculiar situation of having peeler comber command a price equal to or better than spot cotton.

Perlglo
ENKA

THE FATE OF A FABRIC HANGS BY A THREAD

AMERICAN ENKA



THE delicate, soft bloom attained by so many of this season's crepes originated in the mills of American Enka. For here is produced Perlglo, a yarn so rich in irridescent lustre that the fabrics into which it is made possess a life and character and softness which are not merely desirable, but distinctly unusual.

Perlglo, in its own right, is a rayon yarn of surpassing quality. But it owes much of its beauty and workability to the standards of excellence which govern its manufacture. Like all Enka yarns, every inch of Perlglo is produced under a set of uniformity requirements as rigid as our years of technical experience can make them. The result is Enka quality . . . Enka strength.

Enka Perlglo comes to you in weaving or knitting cones, in spools, in bleached or unbleached skeins, in standard or multi-filaments, and in deniers from 50 to 300. Test Enka as rigorously as you will. Other mill operators have — and they found Enka Perlglo a surpassingly fine product, rigidly uniform in quality. Why not have us put on a trial run in your own mills?

★

AMERICAN ENKA CORPORATION
271 Church Street, New York City
Asheville, N. C. • Providence, R. I.

Gives just enough

GLOW
to
any
FABRIC

★

◆ Hearing on Botany Transfer, June 1

THE receivers of the Botany Consolidated Mills, Inc., have a project under way to turn over certain assets of the concern to the Botany Worsted Mills, Passaic, N. J., and as a result of this move, creditors and stockholders, and in addition, the City of Garfield, and the Chase National Bank in New York, in an order made by Federal Judge Guy L. Fake, have been directed to show cause on June 1 why the project should not be approved.

Receivers' Recommendations

The receivers, Franklin W. Fort, Charles Johnson, Henry C. Whitehead, R. E. Meyers, and Henry Bahnsen, made a report to Judge Fake in the U. S. District Court at Newark, wherein they recommended the following:

First, to discontinue the operation of the Botany Consolidated Mills.

Secondly, to either sell or assign to the Botany Worsted Mills certain merchandise and supplies now in the possession of the receivers, also including the trade name of the Botany Consolidated Mills, Inc., for the sum of $185,000, and that the receivers allow a credit of $32,787 against this sum, and also that the receivers retain, without cost, certain machinery, supplies, and accessories which the receivers consider salable.

Third, to accept a written guarantee of the Botany Worsted Mills that they will pay this consideration.

Fourth, that the receivers may be authorized to execute an agreement of sale with the Botany Worsted Mills.

Canadian Cottons Profit

After allowance for cost of manufacturing, raw material, marketing, administration, depreciation, government taxes and other charges, the Canadian Cottons, Ltd. sales of $6,541,000 in the fiscal year ended March 31, 1932, yielded an operating profit of $120,611. This compares with $109,407 from sales of $6,431,171 in previous year.

Taking into account an increased income from investments, payment of bond interest, allowance for bad debts, earnings applicable to the preferred stock totalled $125,409, the equivalent of $3.42 on each of 36,615 preferred shares. This compares with $2.87 per share in the previous year and $1.57 per share in the year ended March 31, 1930. Surplus has again been reduced by payment of preferred dividends.

Net profit of $676 is reported by Dominion Linens, Ltd., for the 13 months' period ended Jan. 31, 1932. The company entered the period with deficit in surplus account of $114,504. to which has been added $338 on account of Tilsonburg expenses; $15,147 written off Tilsonburg buildings, plant and machinery; $2,720 former accounts written off and $129,760 written off on Flax Spinners, Ltd. Current assets were valued at $94,587, as against current liabilities of $81,315, leaving net working capital of $13,272.

Dividends Declared

Esmond (R. I.) Mills have declared regular quarterly dividend of $1.75, on preferred stock, to stockholders of record April 26.

American Thread Co., Inc., ($5 pfd.), 12½c. semi-annual dividend, to stockholders of record May 31.

Providence Bleaching, Dyeing & Calendering Co., pfd., quarterly dividend of $1.50, to stockholders of record May 15.

Kendall Co., pfd. series A, quarterly dividend of $1.50, payable to stockholders of record May 10.

Durham Hosiery Mills, on 6% pfd., declared April 19, payable June 1, to stockholders of record May 15.

Piedmont (S. C.) Mfg. Co. has declared a 3% dividend.

Directors of Dominion Textile Co., Limited, have declared the regular dividend of $1.25 on the common stock, and 1¾% on the preferred payable July 2, to shareholders of record June 15, and preferred payable July 15, to shareholders of record June 30; both for the quarter ending June 30. The dividend on the common will be paid 75c. from profits on operations, and 50c. from income on investments.

Financial Brevities

By amendment to its charter the Industrial Cotton Mills Co., Rock Hill, S. C., has reduced its issued and outstanding capital stock from 22,437 shares to 14,912 shares.

Horner Brothers Woolen Mills, Eaton Rapids, Mich., have arranged for a change in capital from $850,000 to $750,000.

▶ New England Textile Stocks

	Sale	Bid	Asked
Am. Mfg. Co., pfd.	50	44	..
Amoskeag	2	1½	2
Arlington	10	8	10
Associated Textile	10	..	10
Bates	10	2	..
Berkshire Associates, com.	1½	1	..
Berkshire Associates, pfd.	40½	6½	..
Bigelow-Sanford, com	9½	7	9
Edwards	80½	..	25
Farr Alpaca	15	9	11
Hamilton Woolen	47½	50	55
Hill	7	2	5
Ludlow	48½	33	..
Merrimack, com	3	3	6
Nashua, com	3½	1	4
Nashua, pfd.	29	..	14
Naumkeag	46	40	45
Newmarket	10	5	10
Otis	45	38	42
Pacific	6	5	5½
Pepperell	34½	25	28
Plymouth Cordage	38	33	36
West Point	25	24	27
York	8½	2	5

▶ Southern Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co.	20	34
American Yarn & Processing Co.	..	20
Chadwick Hoskins Co. (Par $25)	3	8
Chadwick-Hoskins Co., 8% pfd.	50	65
Crescent Spinning Co.	15	26
Durham Hosiery, 6% pfd.	14	17
Erwin Cotton Mills Co., 6%, pfd.	88	94
Flint Mfg. Co.	..	45
Flint Mfg. Co., 7%, pfd.	..	65
Hanes, P. H. Knitting Co.	..	6
Hanes, P. H. Knitting Co., 7%, pfd.	70	80
Linford Mills	19	32
Perfection Spinning Co.	22	37
Roanoke Mills, 1st pfd., 7½%	24	34
Rosemary Mfg. Co., pfd., 7½%	50	..
Stowe Spinning Co.	..	30
Ware Shoals Mfg. Co.	..	80
Ware Shoals Mfg. Co., 7%, pfd.	75	85
Winget Yarn Mills Co.	..	40
Wicasset Mills Co.	105	120
(A. M. Law & Co., Spartanburg, S. C.)		
Avondale Mills, Ala.	450	550
Bibb Mfg. Co.	58	64
Clifton Mfg. Co.	43	50
D. E. Converse Co.	40	45
Dunean Mills	..	55
Dunean Mills, pfd.	..	85
Gossett Mills	..	25
Hunter Mfg. & Com. Co., pfd.	..	30
Judson Mills, A pfd.	..	70
Judson Mills, B pfd.	..	65
Monarch Mills	..	65
Newberry Cotton Mills	50	55
Orr Cotton Mills	..	25
Pacolet Mfg. Co.	..	20
Piedmont Mfg. Co.	50	56
Riverside & Dan River Mills (Par $25)	4	7
Riverside & Dan River Mills (6%, pfd.)	40	45
Southern Bleachery & Print Works, pfd.	..	40
Spartan Mills	..	80
Union-Buffalo Mills, 1st pfd.	20	25
Victor-Monaghan Co.	..	35

▶ Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co.	150	160
Barnard Mfg. Co.	..	6
Berkshire (com.)	¼	1½
Berkshire (pfd.)	5	8
Bourne Mills	..	12
Border City Mfg. Co.	..	3
Charlton Mills	..	40
Davol Mills	1	2
General Cotton	¼	1½
Luther Mfg. Co.	..	57
Merchant Mill	..	..
Narragansett Mills	..	2
Pepperell Mfg.	26	29
Pilgrim Mills	..	25
Richard Borden Mfg. Co.	1	..
Sagamore Mfg. Co.	..	..
Shove Mills	..	..
Stafford Mills	..	1
Stevens Mfg. Co. (pfd.)	7	12

▶ Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended May 24.

	High	Low	Last Sale	Net Ch'ge
Adams Millis	18½	18	18	—½
*American Thread, pfd.	2½	2½	2½	—¼
American Woolen	2	1½	2	....
American Woolen, pfd.	23½	21	22	—½
Belding-Heminway	3½	3½	3½	—¼
*Blumenthal	1½	1½	1½	—¼
Botany Mills, A	1	½	1	+¼
Cannon Mills	15½	14½	14½	—½
Century Ribbon	3½	3½	3½	—¼
Collins & Aikman	4½	4	4	—½
Consolidated Textile	½	½	½	....
Duplan Silk	7½	7	7	—½
Durham Hosiery, pfd.	17½	17½	17½	....
Gotham Hosiery	13½	11	12½	....
Industrial Rayon	23½	11½	12	—11½
Kayser, Julius	5½	5½	5½	....
Kendall, pfd.	26	22	22	—3
Mallinson	½	½	½	+½
*May Hosiery, pfd.	17½	17½	17½	....
Mohawk Carpet	7	6½	6½	—½
Munsingwear	10	10	10	—1
Phoenix Hosiery	5½	5	5½	+½
*Powdrell & Alexander	5½	5½	5½	....
*Propper-McCallum	1	1	1	....
Real Silk Hosiery	4	3½	3½	+½
*Tubize	1½	1½	1½	+½
United Piece Dye Works	7½	6½	6½	—½

*Listed on Curb.

▸ Speakers Named For S.T.A. Meeting

The program for the 24th annual meeting of the Southern Textile Association, subject to final approval of President T. W. Mullen, will include addresses by Dr. E. W. Sikes, president of Clemson College, who will speak Friday morning, June 24; Hon. W. H. Saunders, of Gastonia, N. C., at the banquet Friday evening; and Major G. Heyward Mahon, of Greenville, S. C., scheduled to talk at the Saturday morning session. A. E. Jury, agent, Winnsboro (S. C.) Mills, will also deliver an address Saturday morning on the subject of plant maintenance and mill village beautification. Members have been invited to visit the plants of the Champion Fiber Co., at Canton, N. C., and the American Enka Corp., near Asheville, N. C. The meeting, as previously announced, will be held at the Skyland Hotel, in Hendersonville, N. C., June 24 and 25.

▸ First Furness Unit Completely Equipped

Important progress has been made by the Furness Corp., Gloucester City, N. J., in the complete installation and operation of the first unit of its equipment for the manufacture of cuprammonium yarn. The spinning unit consists of 24 frames of 34 spindles each, or a total of 816 spindles. This equipment is now producing 1,500 lb. of yarn per day, equally divided between 50 and 100 denier. The plant is being operated in four shifts of 6 hr. each.

Operation of the spinning machines consists almost entirely of patrol work. An interesting demonstration of how little supervision of the spinning frames is required was offered recently when a fuse blew out in the lighting system, which is separate from that controlling the motors which drive the machines. The plant continued in full operation for 90 min. in complete darkness; and when the lights were turned on, only two ends were found to have broken down.

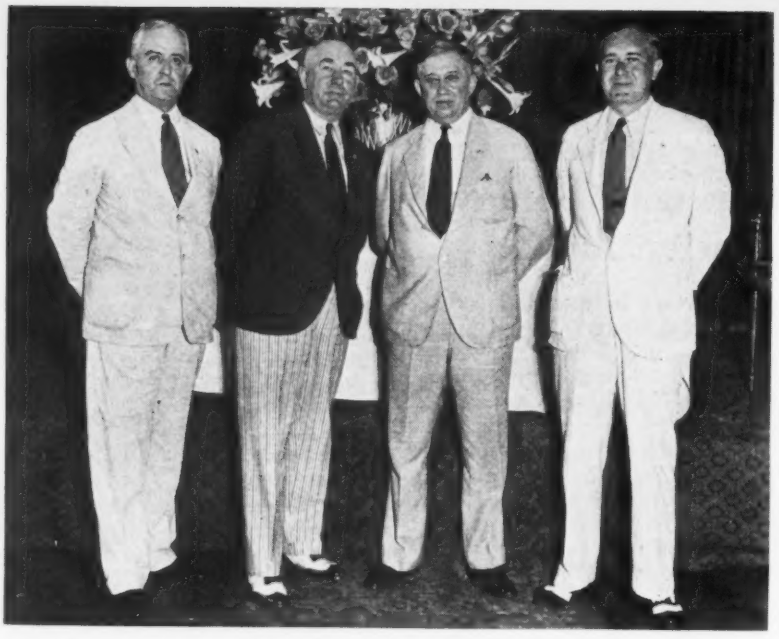
As announced previously, Julius Kayser & Co., New York, has contracted for the output of the unit for a period of two years. The 50 denier yarn is shipped on spools as they are wound on the machine, and the 100 denier is wound on cones of 4 lb. each. Yarn which is spun in the morning is ready to be shipped the same evening.

It is reported that additional equipment will be installed in the near future.

▸ Phi Psi Fraternity Holds Annual Convention

John H. Grady, of John Campbell & Co., Boston, Mass., was elected grand president of the Phi Psi Textile Fraternity at the annual convention of that organization at Blowing Rock, N. C., May 13 and 14. Aug. W. Smith, Jr., of Greenville, S. C., was re-elected grand secretary. Approximately 75 members and their guests were present for the convention. F. Gordón Cobb, general manager of the Lancaster (S. C.) Cotton Mills, won the golf tournament.

Other officers elected were as follows: vice-president, Harold Cochrane; treasurer, Edwin B. Ferrell, Boston; editor of the *Quarterly*, J. Alden Miller, Jr., of Louisville, Ky.



Officers of American Cotton Manufacturers Association at Atlanta, Ga., May 21, 1932—left to right, W. M. McLaurine, secretary-treasurer; T. M. Marchant, second vice-president; B. B. Gossett, new president; C. J. Callaway, retring president. Newly elected first vice-president, Donald Comer, was not at the convention. *See report of event, pages 34 to 43.*

▸ Brighton Worsted Co. to Be Sold on June 2

The stock, machinery and equipment of the Brighton Worsted Co., Tioga and D Sts., Philadelphia will be sold at auction at 10 a.m., on June 2, on the premises by Samuel T. Freeman & Co., auctioneers. The sale comprises 120 C. & K., 72 and 86-in., 4 x 4 box looms as well as dryers, sizers, beamers, winders, spoolers, etc. Sale is by order of Messrs. Moyer, Hulton and Butt, receivers.

▸ Certain Manville-Jenckes Property Offered at Auction

Certain property of the Manville-Jenckes Co., Pawtucket, R. I., will be sold at auction at noon, June 14, on the premises at Weeden St. This includes two parcels of land with manufacturing buildings thereon together with certain boilers and generators. Sale is by order of Messrs. Bliss and Urquhart, receivers.

▸ Wm. J. Callaghan with Donald Crawford Co.

Donald Crawford Co., 400 Chestnut St., Philadelphia, and 45 East 17th St., New York, woolen, worsted and novelty yarns, announce that Wm. J. Callaghan, formerly of Henry H. Benedict Co., is now associated with their organization.

▸ Wool Prices Lower in London

The London Wool Sales opened May 24 with prices mostly 5 to 10% below the close of the previous series on April 22 according to a cable received by the Foreign Service of the Bureau of Agricultural Economics from E. A. Foley, American Agricultural Attache at London. German buyers were taking mostly greasy merino wools and France was taking greasy crossbreds. Bradford buyers were interested chiefly in greasy crossbreds and slipes.

▸ Minimum Power Charge Waived

The Duke Power Co. has advised textile mills served by its lines in the Piedmont Carolinas that in order to help them through the difficult situation brought about by curtailment of mill operations the company will waive its minimum power charge from May 1 to Sept. 1 of this year.

▸ Lower Freights on Cotton

With the approach of the cotton shipping season, railroads in the Southeast are preparing to put on a 20% reduction in freight rates on raw cotton. Recently the Interstate Commerce Commission approved of the new rate basis, and if the new tariffs can be put into tangible form and published by June 1, the new schedules will go into effect by that time.

For instance, the present rate on cotton from Atlanta to New Orleans is 80c. per 100 lb., but after June 1, it will be 64c. The new rates are expected to have particular bearing on the cotton traffic into the Carolina textile districts, it is said by railroad officials.

▸ New England Seeks Rates Equalized With South

Equalization of freight rates on shipments from southern mills and from New England mills to points West as one means of helping the northern texelit plants to compete with the South was urged today before the Interstate Commerce Commission by Ernest N. Hood, treasurer, Pequot Mills, Salem and vice-president of the National Association of Cotton Manufacturers.

Quoting differences in charges from the North and from the South he said rates on shipments of sheets and pillow cases from Salem, Mass., to Chicago per 100 lb. are $1.54 as compared to $1.02 from Durham, N. C., to Chicago; $0.96 from Danville, Va., $1.02 from Spray, N. C., and $1.02 from Kannapolis, N. C. to Chicago. From Salem to St. Louis $1.75 as compared to $0.795 from Thomaston, Ga., to St. Louis, $0.95 from Durham, N. C. to St. Louis; $0.87 from Danville, Va., $0.95 from Spray, N. C., and $0.95 from Kannapolis to St. Louis.

Freight rates on shipments of cotton and mixed cotton and wool blankets are now one of the greatest factors contributing to loss of business from New England plants to Southern mills, F. B. Foster of Nashua Mfg. Co., Nashua, N. H., told the Interstate Commerce Commission at continuation of freight rate hearing.

▸ Silk Employment Falls 9.9% in April

A decrease of 9.9% in employment in the silk industry during April, 1932 as compared with the previous month is reported by the Silk Association of America, Inc. April employment was 26.5% lower than the same month of last year. Broad silk loom employment decreased 9.1%, narrow silk loom employment decreased 11.5% and spinning spindle employment decreased 11.5% as compared with March, 1932. Machinery operations during March decreased 6.5% for broad looms, decreased 8.7% for narrow looms and decreased 6.7% for spinning spindle activity as compared with the previous month.

▸ Kiwanis Meets in Whittall Power House

The Kiwanis Club of Worcester, Mass., held its meeting on May 20 at the power house of the M. J. Whittall Associates of that city. Francis J. Sill, consulting engineer, delivered an address. The plant was started in December, 1930 by Frank Ducey, chief engineer.

▸ Raw Silk Export Duty and Tax Removed in China

To aid the silk industry, the export duty on all raw silk shipped from China and the special tax on all yellow and white silk exported abroad from the Chinese provinces of Kiangsu and Chekiang have been removed with effect from May 18, according to a report to the Department of Commerce from Trade Commissioner A. Viola Smith, Shanghai.

▸ Rayon Industry Asks Import Tax on Raw Silk

Agitation for an import tax on raw silk which has been discussed for some time, crystallized this week in the presentation to Congress by rayon manufacturers of a petition asking that such a tax be imposed. The brief, which urged a tariff of 75c. per lb. on silk to yield an annual revenue of about $60,000,000, was signed by seven rayon companies representing approximately 90% of the synthetic yarn industry. Copies of the brief were sent to the various Congressmen in the States where rayon plants are located.

In view of the approaching adjournment of Congress, it is not believed that any action can be taken on the request this session, but it is understood the question will be brought up again when Congress reconvenes in the fall.

The brief urges the tariff as a help toward balancing the Federal budget, adding that the domestic rayon industry "is sorely pressed" by the "ruinously low prices at which Japan is offering raw silk to this country," and emphasized the point that Great Britain now recognizes the luxury character of silk in an import tax. The brief is signed by the following companies: The Viscose Co., Du Pont Rayon Co., Industrial Rayon Corp., American Enka Corp., American Glanzstoff Corp., Tubize Chatillon Corp., and Shenandoah Rayon Corp.

▸ April Imports of Rayon

The Bureau of Foreign and Domestic Commerce, Washington, announces imports of rayon and other synthetic textile fibers into the United States during April, 1932, as follows:

	Pounds	Dollars
Yarns		
France	6,368	7,603
Germany	17,685	11,888
Italy	2,411	1,990
	26,464	21,481
Waste		
Italy	5,036	1,559
Germany	32,766	3,865
	37,802	5,424
Cut or Staple Fiber		
Germany	61,379	16,043

▸ Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended May 21, based upon data compiled by Dept. of Agriculture, follow:

	Week Ended May 21	Total to Date 1932	Total to Date 1931
Domestic	648,900	23,639,000	46,148,000
Foreign	3,000	11,148,300	22,119,000
Total	651,900	34,787,300	68,267,000
IMPORTS AT PRINCIPAL PORTS			
Boston	3,000	11,148,000	22,119,000
Philadelphia	103,000	8,769,000	18,264,000
New York	337,000	11,569,000	21,551,000
Total	443,000	31,486,000	61,934 000

Business News

Pacific R & H Company Elects

At a meeting of the board of directors of the Pacific R & H Chemical Corp., El Monte, Calif., C. K. Davis was elected chairman of the board; Dr. E. A. Rykenboer, president; F. S. Pratt, vice-president; A. Frankel, treasurer; H. A. Schumacher, assistant treasurer; L. Rice, secretary; and J. L. Fahs, assistant secretary. The company is a subsidiary of The Roessler & Hasslacher Chemical Co., Inc., New York, N. Y.

Curtis & Marble Acquire Business of Elliot & Hall

Curtis & Marble Machine Co., Worcester, Mass., has acquired the business of Elliot & Hall, Worcester, and the plants have been consolidated. Both concerns manufacture cloth-folding and other textile machinery. Edward Hall, head of the latter company for 50 years before his retirement in 1915 died May 15 at the age of 92 years.

J. R. Brown to Handle Metal Working Presses in Middle West

J. R. Brown has been appointed sales representative for the Farrel-Birmingham Co., Inc., Ansonia, Conn., to handle the sale of the Rafter patent press-brake and other types of mechanical and hydraulic metal working presses in the Middle West territory. His headquarters are at the company's branch office, First Central Trust Building, Akron, Ohio.

Lincoln Electric Appoints Western Distributor

The Lincoln Electric Co., Cleveland, Ohio, has appointed the Great Northern Tool & Supply Co. as distributors for Lincoln products in Montana and Wyoming. "Stable-Arc" welders, welding supplies and "Lincweld" motors will be distributed in this territory through Great Northern stores and shops in Billings and Kevin, Montana; Cody and Casper, Wyoming.

Speaks at Clemson College

R. H. Mickey, of the Alemite Corp., with headquarters in Charlotte, N. C., recently delivered a talk to students at the Clemson College (S. C.) School, describing the equipment made by his company.

Oxweld Prices Reduced

The Linde Air Products Co., New York, announces that substantial reductions in the prices of Oxweld welding and cutting blowpipes are now in effect.

Coordinate G. E. Refrigeration Division

Co-ordination of the warehouse and distribution activities under the direct management of A. H. Sweeney, formerly manager of refrigerator production, has been announced by P. B. Zimmerman, general manager of the General Electric Refrigeration department, Cleveland, Ohio.

QUOTATIONS

at close of business, May 25, 1932
Prices cover average qualities unless otherwise stated

Cotton Goods

	May 25	May 18	May 26 1931
PRINT CLOTHS			
37 -in., 64x60, 7.60	2⅞c.	2⅞c.	3⅛c.
38½-in., 64x60, 5.35	3 c.	3 1/16-3⅛c.	4⅛c.
39 -in., 68x72, 4.75	3⅛c.	3⅛c.	5⅛-5⅜c.
29 -in., 72x76, 4.25	4 c.	4¼c.	6¼c.
39 -in., 80x80, 4.00	4¼-4¼c.	4¼c.	6½-6⅝c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	3¾c.	3¾-3⅞c.	5⅜c.
36-in., 48x48, 3.00	4¼c.	4¼c.	5⅜c.
37-in., 48x48, 4.00	3½c.	3½c.	4⅝c.
PAJAMA CHECKS			
6½-in., 72x80, 4.70	4 c.	4 c	6-6¼c.
6 -in., 64x60, 5.75	3½c.	3½c.	4½c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	4½-4⅝c.	4½c.	6⅜c.
Denims, 2.20	8¼c.	9¼c	12 c.
Tickings, 8 oz.	11 c.	11 c.	15½c.
Standard prints	6¼c.	6¼c.	7½c.
Eastern staple ginghams, 27-in.	6 c.	6 c.	8 c.

Cotton Waste

Peeler comber	5¾ – 6¼
Peeler strips	5 – 5¼
Sak. comber	5 – 5¼
Choice willowed fly	2½ – 3
Choice willowed picker	2 – 2½
Sak strips	6½ – 7
Linters (mill run	1½ – 2
White spooler (single)	3½ – 4

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.—4c., higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.12	22s	$0.15
10s	– .12	24s	– .15½
12s	– .12½	26s	– .16½
16s	– .13	30s	– .18
20s	– .14	40s ex. qual.	– .25

TWO-PLY SKEINS AND TUBES

8s-2	$0.11½ – .12	26s-2	$0.16½
10s-2	– .12½	30s-2	17½ – .18
12s-2	12½ – .13	36s-2	– .22½
14s-2	– .13	40s-2	– .23½
16s-2	– .13½	49s-hi.brk.	– .25½
20s-2	13½ – .14	50s-2	– .29
24s-2	– .15½	6ps-2	– .32

SINGLE WARPS

10s	$0.12	24s	$0.15½
12s	– .12¼	26s	– .16½
14s	– .12½	30s	– .18
16s	– .13	40s ex. qual.	– .24½
20s	13½ – .14		

TWO-PLY WARPS

8s-2	$0.12	24s-2	$0.15½ – .16
10s-2	– .12½	26s-2	16½ – .17
12s-2	– .13	30s-2	17½ – .18
14s-2	– .13½	49s-2 ordin.	– .23½
16s-2	– .13½	50s-2	– .29
20s-2	13½ – .14½	60s-2	– .32

8s-3 and 4-ply skeins and tubes; tinged, 10½; white, 11½; waste, 10

HOSIERY CONES (Frame Spun)

8s	$0.11 – .11½	22s	$0.15
10s	.11½ – .12	24s	– .15½
12s	.12½ – .13	26s	– .16
14s	.13 – .13½	30s tying	.16½ – .17
16s	– .13½	30s reg.	.18 – .19
18s	.13½ – .14	30s ex.qual.	.19½ – .20½
20s	.14 – .14½	40s	– .24

COMBED PEELER (Average Quality)

TWO-PLY — (Knitting Twist) Cones

20s-2	$0.23½	60s-2	$0.38 – .39
30s-2	.27 – .27½	70s-2	.49 – .50
36s-2	.28 – .29	80s-2	.59 – .60
40s-2	.29 – .30	90s-2	.84 – .86
50s-2	.33 – .34	100s-2	.98 – 1.05

WARP SKEINS AND CONES

TWO-PLY — (Warp Twist)

20s-2	$0.24½	60s-2	$0.39 – .40
30s-2	.28 – .28½	70s-2	.50 – .51
36s-2	.29 – .30	80s-2	.60 – .61
40s-2	.30 – .31	90s-2	.85 – .87
50s-2	.33 – .34	100s-2	.98 –1.05

SINGLES

12s	$0.18 –0.19	30s	$0.23 –0.25
14s	.18½ – .19½	36s	.27 – .28
16s	.19 – .19½	40s	.28½ – .29½
18s	.19 – .20	50s	.33 – .34
20s	.20 – .21	60s	.36 – .38
24s	.21½ – .22	70s	.47 – .48
28s	.23 – .24	80s	.57 – .58

MERCERIZED CONES — (Combed. Ungassed)

26s-2	$0.39 –0.42	90s-2	$0.92
30s-2	.40 – .44	100s-2	1.17 –1.24
36s-2	.42 – .44	120s-2	1.52– 1.57
40s-2	.44 – .47	30s	.49 – .51
45s-2	.45 – .47	40s	.54 – .56
50s-2	.47 – .50	50s	.60 – .62
60s-2	.52 – .55	60s	.65 – .68
70s-2	.66 – .68	70s	.77 – .80
80s-2	.76 – .79	80s	.92 – .96

Cotton Prices and Statistics

COTTON STATISTICAL DATA

(Fluctuations of Futures)

	Closed May 19	For Week High	For Week Low	Closed May 25	Net Ch'ge
May	5.68	5.79	5.59	....	....
June	5.70	5.80	5.61	5.58	—0.12
July	5.74	5.83	5.65	5.67	—0.07
August	5.81	5.90	5.74	5.75	—0.06
September	5.89	5.98	5.83	5.83	—0.06
October	5.98	6.09	5.89	5.92	—0.06
November	6.04	6.12	5.97	5.97	—0.07
December	6.11	6.22	6.03	6.04	—0.07
January	6.19	6.29	6.11	6.12	—0.07
February	6.26	6.34	6.19	6.19	—0.07
March	6.33	6.45	6.26	6.27	—0.06
April	....	....	....	6.34	.....

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Thursday, May 19	5.85	5.78	5.53
Friday, May 20	5.90	5.85	....
Saturday, May 21	5.85	5.85	....
Monday, May 23	5.95	5.89	4.51
Tuesday, May 24	5.75	5.75	4.60
Wednesday, May 25	5.75	5.72	4.51

FOREIGN COTTONS

Egyptian Cotton

		Change
Alexandria Exchange, May 24		
July, Sak	11.03	— 0.12
June Uppers	9.00	— 0.25
May-June Shipment c.i.f. Boston (Tariff not included)		
Fully good fair Sak (No. 38)	11.75	.....
Fully good fair to good Uppers (No. 10)	9.50	.....

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	16
Peruvian Pima No. 1	15½
Peruvian Moderate Rough	10
Peruvian Full Rough	16
China Tientsin No. 1	8
India Rough	7 to 10
India Smooth	6½ to 7½

(By Lehman Bros.)

MOVEMENT INTO SIGHT

	This Year	Last Year
Week	50,000	58,000
Season	*14,173,000	12,695,000
	*21,000 added	

WORLD VISIBLE SUPPLY

	May 20	One Year Ago
Interior towns and ports of U.S.*	5,451,000	4,331,000
Afloat to and at ports of Europe	1,394,000	1,626,000
Afloat to and at ports of Orient	907,000	424,000
Total	7,752,000	6,381,000
Change during week	Decrease 60,000	Decrease 149,000

* Includes afloat to New York.

FORWARDINGS TO MILLS OF WORLD

	This Year Week	This Year Season	Last Year Week	Last Year Season
No.States,U.S.	8,000	694,000	19,000	803,000
So.States,U.S.	40,000	3,843,000	65,000	3,439,000
Total U.S.	48,000	4,537,000	84,000	4,242,000
Great Britain	21,000	1,123,000	18,000	765,000
Continent	13,000	2,984,000	67,000	2,966,000
Orient	25,000	2,783,000	35,000	1,179,000
Canada and other America	3,000	161,000	3,000	193,000
Total foreign countries	62,000	7,051,000	123,000	5,103,000
World total	110,000	11,588,000	207,000	9,345,000

EXPORTS FROM UNITED STATES

Total	120,000	7,721,000	71,000	6,179,000

AVERAGE PRICE MAY-JUNE, SHIPMENT HARD WESTERN COTTON

	F.o.b. New England Middling	St. Middling
1 —in.	7¼–7½c.	7¾– 8c.
1⅛-in.	7⅞–8c.	8¼–8½c.
1 —in.	8¼–8½c.	8⅝–9c.
1¼-in.	10¾–11c.	11¼–12c.

Based on New York, July. 5166

SPOT FLUCTUATIONS AND STOCKS

Markets	May 18	May 25	Sales	This Week	Last Year
Galveston	5.65	5.60	2,938	609,020	521,741
New Orleans	5.74	5.72	2,852	1,039,198	676,892
Mobile	5.40	5.40	561	165,791	253,091
Savannah	5.69	5.64	1,227	240,275	356,755
Norfolk	5.70	5.65	724	51,078	75,114
New York	5.75	5.75	4,450	203,982	226,874
Augusta	5.50	5.44	571	107,846	73,132
Memphis	5.10	5.05	4,963	328,851	198,782
St. Louis	5.10	5.15	....	....	6,085
Houston	5.60	5.55	4,225	1,272,583	944,462
Dallas	5.25	5.25	4,119	17,599	7,922

DIFFERENCES ON AND OFF MIDDLING WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	0.60†	.75†	0.65†	0.63†	0.65†
S.G.M.	.45†	.50†	.55†	.56†	.52†
G.M.	.35†	.40†	.40†	.38†	.38†
S.M.	.25*	.20†	.25†	.19†	.22†
S.L.M.	.25*	.20*	.25*	.25*	.23*
L.M.	.50*	.50*	.50*	.63*	.50*
S.G.O.**	.85*	.75*	.85*	.88*	.82*
G.O.	1.00*	1.00*	1.15*	1.25*	1.12*

YELLOW TINGED

G.M.	0.25*	0.25*	0.25*	0.25*	0.26*
S.M.	.35*	.40*	.35*	.50*	.39*
M.**	.50*	.50*	.50*	.63*	.52*
S.L.M.	.90*	.90*	.85*	.88*	.88*
L.M.	1.25*	1.25*	1.15*	1.25*	1.24*

YELLOW STAINED

G.M.	0.50*	0.55*	0.50*	0.50*	0.50*
S.M.**	.90*	.90*	.85*	.88*	.87*
M.**	1.25*	1.15*	1.15*	1.25*	1.22*

BLUE STAINED

G.M.**	0.65*	0.60*	0.50*	0.63*	0.58*
S.M.**	1.00*	.80*	.85*	1.00*	.91*
M.**	1.25*	.90*	1.15*	1.25*	1.18*

**Grades not deliverable on contract.
*Off Middling †On Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne	$0.17 – $0.18	¾ blood	$0.16 – .17
Fine clthg	.12½– .13	½ blood	.15 – .16
¼ blood	.17 – .18		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.41 – .43
California, Northern	.38 – .40

PULLED—EASTERN (CLEAN BASIS)

A-A	$0.46 – $0.48	B-Super	$0.39 – 0.41
A-Super	.41 – .43	C-Super	.35 – .37

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.43 – .45
Staple ¾ bld	.40 – .42
Fine and fine medium	.39 – .41
½ blood	.35 – .37
¼ blood	.31 – .33

MOHAIR—DOMESTIC

Best carding	.17 – .19
Best combing	.21 – .23

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 – 0.20
Cape firsts	.18 – .20

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.35 – 0.37
64s	.28 – .30
58s-60s	.23 – .25

(IN GREASE)

Montevideo:	
58s-60s	$0.15 – .16
56s	.14 – .15
50s	.13 – .14
Buenos Aires:	
4s, 40-44s	$0.09 – .10
5s, 36-40s	.08 – .09

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.13 – 0.14
China: Combing No. 1	.10 – .11
China Filling Fleece	.09 – .10
Szechuen ass't	.10 – .11
Cordova	.08 – .09
Scotch black face (nominal)	nominal
East India: Kandahar	.13 – .14
Vican'r	.15 – .16
Joria	.15 – .16

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.67½– .70
2-24s 40s	– .80
2-26s 44s	.80 – .82½
2-28s 46s	.85 – .87½
2-30s 48s	.90 – .92½
2-32s 50s	.92½– .95
2-30s 64s fancy mixes	1.15 –1.17½

(Single yarns 5c. less than above)

2-36s 58s	1.00 –1.02½
2-40s, 60s	1.10 –1.12½
2-40s, 64s	1.12½–1.17½
2-50s, 66s	1.27½–1.30
2-60s, 70s	1.65 –1.70

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	– .60
2-20s, 48s in oil	.62½– .65
2-20s, 50s in oil	.65 – .67½
2-20s, 56s in oil	.77½– .80
2-20s, 60s in oil	.95 – .97½
2-20s, 64s in oil	1.02½–1.05
1-18s, 48s dyed	.82½– .85
1-18s, 50s dyed	.85 – .87½

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	.87½– .92½
1-20s, 60s	1.00 –1.02½
1-18s, 64s, dyed	1.20 –1.22½
1-26s, 64s	.97½–1.00
1-30s, 64s, Warp	1.07½–1.10
2-30s, 64s, Fancy mixes	1.17½–1.20
2-40s, 64s, Zephyrs	1.17½–1.20
1-50s, 66s	1.35 –1.37½
2-50s, 66s	1.42½–1.45
2-60s, 70s domestic	1.80 –1.85
1-60s, 70s, Australian	1.60 –1.70
2-60s, 70s, Australian	1.77½–1.87½

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	.87½– .90
1-40s, 50-50-60s on cops	.95 – .97½
1-40s, 50-50-64s on cops	.97½–1.00
1-40s, 50-50-64s Australian cops	1.10 –1.15

Underwear mixes, 3 to 5c.. Solid color, 35c. additional.

New York Top Futures

	Closed May 18	For the Week—High	Low	Closed May 24	Net Ch'ge
May	53.50	53.50	53.00	....	....
June	53.80	53.80	53.00	53.00	—0.80
July	54.00	54.00	53.50	53.50	—0.50
August	54.30	54.30	53.80	53.80	—0.50
September	54.50	54.50	54.00	54.00	—0.50
October	54.50	55.50	54.00	54.00	—0.50
November	54.50	54.50	54.00	54.00	—0.50
December	55.00	56.00	54.50	54.50	—0.50
January	55.30	55.30	54.80	54.80	—0.50
February	55.50	55.50	55.00	55.00	—0.50
March	55.80	55.80	55.30	55.30	—0.50

Tops and Noils

TOPS—BOSTON (Nominal)

Fine (64-66s)	$0.63 – .65
Half-blood (60-62s)	.60 – .62
High ¾ blood (58s)	.53 – .55
Aver. ¾ blood (56s)	.51 – .53
Low ¾ blood	.50 – .51
High ½ blood (50s)	.46 – .48
46s S. A. and N. Z	.46 – .48
44s S. A. and N. Z	.43 – .45
40s S. A. and N. Z	.40 – .42

TOPS — BRADFORD, ENG. (May 21)

Fine (70s)	22 d	¾ bld. (56s)	17 d
Fine (64s)	21½d	½ bld. (50s)	11½d
¾ bld. (60s)	20½d	Cross-bred (46s)	8½d

NOILS — BOSTON

Fine	$0.35 – $0.37	High ¾ bld.	$0.26 – $0.28
Half-bld	.31 – .33	Low noils	.20 – .23
Aver. ¾ bld.	.28 – .30	Medium colored	.18 – .20
Fine colored	.23 – .28		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.49 – .51
Lap, fine colored	.39 – .41
Hard ends, fine white	.40 – .42
Hard ends, ½ blood white	.25 – .28
Hard ends, fine colred	.17 – .19
Hard ends, medium colored	.13 – .15
Card, fine white	.23 – .25
Burr, fine carbonized	.24 – .26

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, coarse light	$0.04½–0.05
Merinos, fine dark	.02½– .03
Merinos, fine light	.08½– .09
Serges, blue	.03½– .04
Serges, black	.03½– .04
Serges, red	.06 – .07
Knit, white	.17½– .18
Knit, red	.07 – .07½
Knit, light hoods	.08½– .09½
Worsted, light	.03½– .04
Worsted, blue	.04 – .04½
Worsted, black	.04 – .04½

Silk Yarns

THROWN SILK (60 day basis) Prices Nominal

Japan organzine, 2 thd. spec. gd. XX sk. 85%..	$2.55
Japan organzine, 2 thd. grand sk. 83%	2.45
Japan organzine, 2 thd. sp. crack. sk. 81%	2.35
Japan crepe, 3 thd. gd. XX bob. 83%	2.25
Japan crepe, 3 thd. sp. crack. bob. 81%	2.10
Japan crepe, 3 thd. Crack, bob. 78%	1.90
Canton crepe, 3 and 4 thd. 14/16 on bobbins	1.75
Hosiery tram, 3 thd. Japan 90%	3 20
Hosiery tram 5 thd, Japan, 85%	2.30
Hosiery tram, crack XX 78%	2.15

SPUN SILK YARNS (Terms: net 30)

40/2	$2.50	60/2	$2.75
54/2	2.65	62/1	1.85

Raw Silk

(60 Day Terms. Spot Goods) Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 87%	$1.50	$1.40	$1.40
Special Grand, 85%	1.40	1.30	1.30
Grand XX, 83%	1.30	1.25	1.25
Special Crack, 81%	1.20	1.20	1.20
Crack XX, 78%	1.15	1.15	1.15
Extra Extra, 73%	1.10	....	....
Best Extra, 68%	1.00	....	....

Canton filature, new style, 14/16	$1.05
Canton filature, new style, 20/22	1.00
Tussah filature, 8 cocoon	.55

NATIONAL RAW SILK EXCHANGE

	Close May 18	For the Week High	Low	Close May 24	Net Ch'ge
May	1.19	1.20	1.19	1.20	+0.01
June	1.17	1.23	1.17	1.19	+0.02
July	1.20	1.24	1.19	1.20	....
August	1.23	1.30	1.23	1.24	+0.01
September	1.23	1.31	1.23	1.25	+0.02
October	1.22	1.31	1.22	1.25	+0.03
November	1.22	1.31	1.22	1.25	+0.03
December	1.22	1.31	1.22	1.25	+0.03

Total number of bales 2,730. Total approximate value $453,862.50. Trading unit crack XX 13/15 white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
30	8	$2.25	....
50	12-18	1.35	$1.25
75	18-30	1.20	1.10
100	18-40	1.00	.90
125	36-50	.90	.80
150	30	.72	.70
150	24-44	.75	.72
150	60	.85	.82
150	75-90	.85	.82
170	24-27	.75	.72
170	60	.85	.82
200	30-42	.75	.72
300	42-62	.63	.60
450	42-72	.63	.60
600	72-96	.63	.60
900	100-144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	.85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	75	60	$1.30
25	24	2.85	80	60	1.30
30	24	2.60	100	75	1.10
40	30	1.70	120	90	1.00
52	30	1.50	150	112	.90
65	45	1.40	180	135	.87

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.60	125	$1.10
60	1.50	150	1.00
75	1.40	300	1.00
100	1.30		

Rayon Waste

Open bleached waste	$0.13–$0.14
Open bleached waste	.10½
Bleached thread waste (mfs.)	.09
Bleached thread waste (misc.)	.06– .07
Colored thread waste	.03– .04
Colored clips	.03– .04

CONVERTED RAYON WASTE

Bleached tops	$0.30–$0.32½
Unbleached tops	.27– .28
Bleached noils	.11
Unbleached noils	.09½
Bleached garnetts	.12
Unbleached garnetts	.13
Colored garnetts	.10– .11

Silk Waste

Kibizzo Kakai Grand XX	0.50
Kibizzo Kakai Triple Extra	.44
Frison Grand Double	.49
Pierced Cocoons	.50

PARAMOUNT

MODERNIZED HOSIERY FINISHING EQUIPMENT

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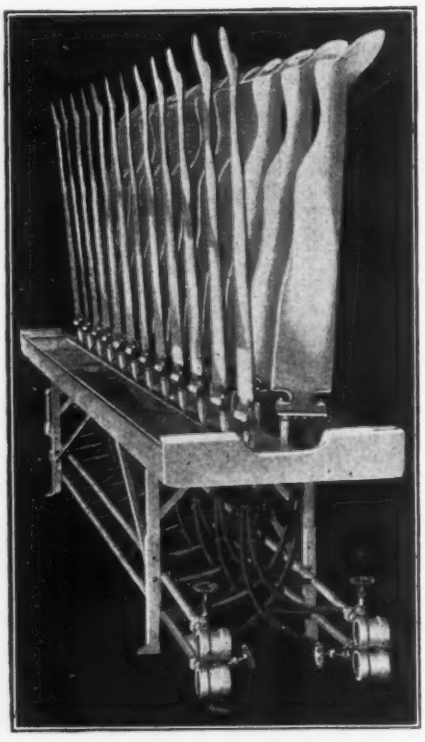

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Forms operated on this table can be turned a full 180 degrees, enabling the operator to adjust the stocking on the reverse as well as the front side of the form and with equal ease. Almost indispensable in finishing picot and fancy tops.

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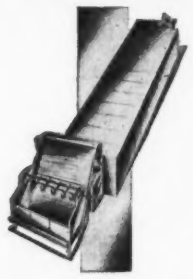

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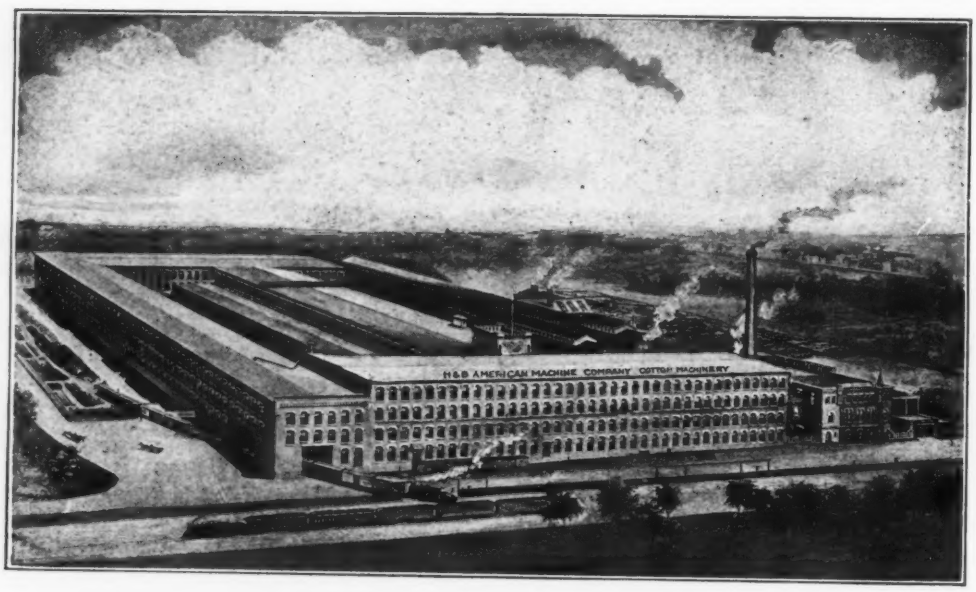

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- Copper Drying Cylinders
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- Cotton Rolls
- Crabbing Machines
  - Yorkshire
  - Continuous
- Cutting-Off Winders
- Cylinders
- Cylinders-Slashers
- Doubling Machines
- Doubling Winders
- Drum Winders
- Drying Cans
- Drying Machines
  - Back
  - Horizontal
  - Hot Air
  - Vertical
- Dye Jigs
- Dye Kettles
- Dyeing Machines
- Dye Padders
- Dumping Machines
- Electric Guiders
- Embossing Calenders
- Expansion Pulleys
- Extractors—Horizontal
- Finishing Machinery
  - Cloth
  - Narrow Fabric
- Finishing Ranges
- Folders
  - Cloth
  - Warp
- Forcing Jacks
- Friction Calenders
- Friction Mangles
- Gas Singers
- Guiders—Electric
- Horizontal Dryers
- Hot Air Dryers
- Husk Rolls
- Hydraulic Calenders
- Hydraulic Mangles
- Hydraulic Forcing Jacks
- Hydraulic Lifting Jacks
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  - Kiers—Dye Jigs
  - Padders—Color Kettles
  - Printing Machines
  - Steamers
- Lace Finishing Machines
- Lustering Machines
- Mangles
  - Dye
  - Friction
  - Tommy Dodd
  - Betty Dodd
  - Starch
  - Stuffing
  - Victoria
- Measuring Machines
- Mercerizing Machines
  - Chainless
  - Range Type
  - Warp
- Moire Machine
- Narrow Fabric Finishing Machines
- Oval Reel Dyeing Machines
- Opaque Machines
- Padders
  - Dye
  - Mercerizing
- Paper Calenders
  - Super
  - Friction
  - Embossing
- Paper Rolls
- Pile Fabric Finishing Machinery
- Pilers
  - Bleach House
  - Bin
- Pin Tenters
- Plating Machines
- Plate Singers
- Printing Machines
  - Cloth
  - Warp Yarn
- Pump—Centrifugal
  - Hydraulic
- Ranges of Equipment
- Reels, Bleach House
- Rolling Calenders
- Rolls
  - Cotton
  - Husk
  - Paper
  - Combination
- Rope Washers
- Sanding Machines
- Sanforizing Machines
- Saturating Machines
- Schreiners Calenders
- Scutchers
- Scotch Dye Tubs
- Scotch Friction Mangles
- Scouring Machines
- Shrinking Machines
- Silk Calenders
- Singers
  - Gas
  - Plate
- Size Kettles
- Sizing Machines
- Slack Washers
- Slashers Cylinders
- Soapers
  - Open
  - Rope
- Sour Squeezers
- Sprinklers
  - Brush
  - Atomizer
- Spreaders
- Special Machinery
- Squeezers
  - Sour
  - Chemic
  - Water
- Steaming Machines
- Starch Mangles
- Straightaway Tenters
- Sulphur Dyeing Machines
- Swing Tenters
- Tanks and Vats
- Tenters
  - Automatic
  - Clamp
  - Pin
  - Straightaway
  - Swing
- Tenter Clips
- Tenter Pins
- Tinned Iron Drying Cylinders
- Warp Bleaching Machines
- Warp Boiling-Out Machines
- Warp Coilers
- Warp Doubling Machines
- Warp Drying Machines
- Warp Dyeing Machines
  - Scotch System
  - English System
  - Indigo
- Warp Folders
- Warp Mercerizers
- Warp Printers
- Warp Sizers
- Warp Splitters
- Warp Washers
- Weft Straightener
- Worsted Finishing Machines
- Washers
  - Cloth
  - Warp
- Vat Dyeing Machines
- Victoria Mangles

Manufacturers of Machinery for
Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Textile Fabrics and Warp Yarns

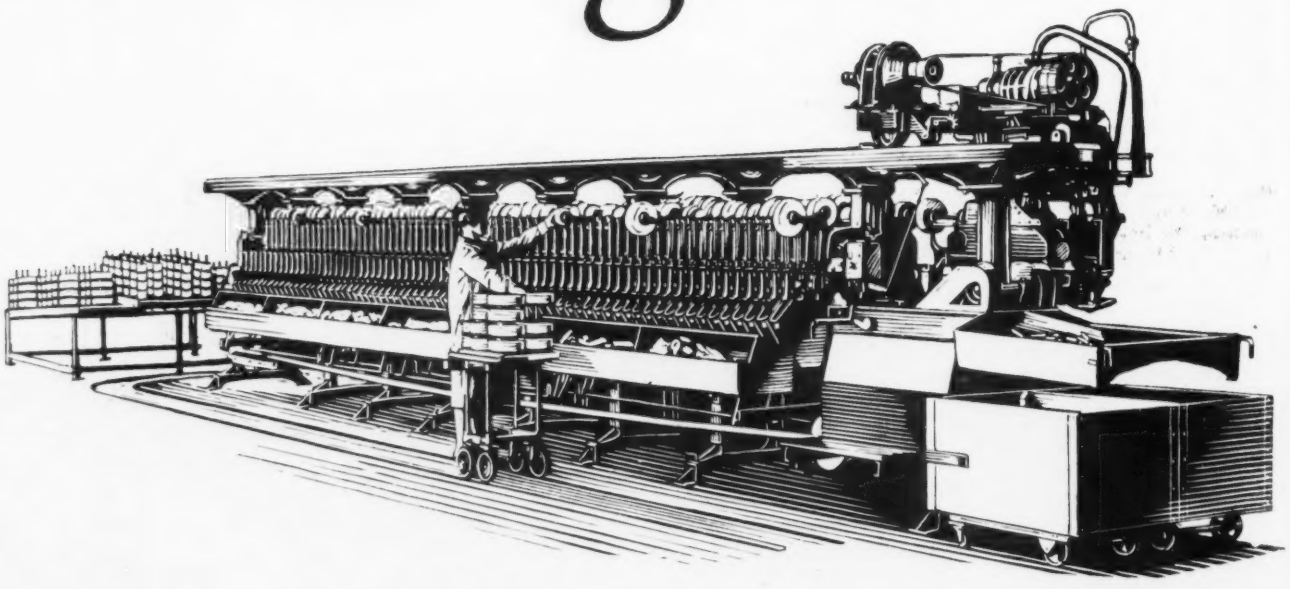
The Textile-Finishing Machinery Co.

New York Office
50 Church St

Providence, R. I.

Southern Agent
H. G. Mayer, Charlotte, N. C.

50% greater



Introducing: BARBER-COLMAN'S
NEW IMPROVED AUTOMATIC SPOOLER
and NEW SUPER-SPEED (900 *yds. per min.*) WARPER

Spooler

A redesigned tying mechanism increases the production of the Spooler 50%.

Warper

An entirely new system of creeling coupled with a higher winding speed gives an increased production of 50% over our former High Speed Warper.

production

from the SAME number of MACHINES . . . . . .

Less Machinery for a Given Production at Less Cost

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS

FRAMINGHAM, MASSACHUSETTS

GREENVILLE, SOUTH CAROLINA

Here is the improved reed which has upset old ideas

THE NEW *Custom-Made* REED BY EMMONS

Accept this offer

FOR many years mill men have been ordering "standard" and "stock" reeds. Now Emmons has perfected a new Custom Made that has upset old standards—gives you a new reed made exactly to your requirements.

Custom Made Reeds *fit* your fabrics exactly, for they are made *for* them, built to your own order. As a result you enjoy a new freedom from reed marks and uneven warp spacing; a reduction in broken ends caused by reeds that do not fit.

Many mills have already switched to these new reeds to gain their production benefits — and they report improved "cover" and better quality weave. You too should get better results from a reed made to fit than one which doesn't fit.

HOW YOU BENEFIT

Suppose you are weaving voiles and want extra strength of dent—you merely specify it. This added strength is Built-In the Custom Made Reed made especially for you. You get exactly what you need —it fits.

Or if you are running broadcloth and require extra air space, you order it. The Custom Made Reed you get has it—air space up to 60%—soldered all the way across, if you require it. You get the reed that fits—exactly.

Yet there is no extra charge; Custom Made Reeds cost no more than ordinary reeds. But you get more because you get exactly what you need—a reed that fits.

ACCEPT THIS OFFER

If you have not yet tried the new Custom Made Reeds, we invite you to do so, and gain these benefits. Try a reed at our risk. Just fill in the coupon below—tell us the weave construction; what you need. You'll get it, built-in the Custom Made Reed.

Then if you are not entirely satisfied—if you don't get all the benefits we claim, return the reed to us, and the charge will be cancelled without hesitation.

Or better, if you are about to buy reeds, specify Custom Made Reeds on half your order; ordinary reeds for the remainder. Equip a section with each and note the results. Then you alone will be the judge of the added advantages of Custom Made Reeds at no extra cost.

EMMONS LOOM HARNESS CO.

Non-Slip Mail Eye Harness
Chafeless Cord Harness

Multiple Air Space Reeds
Custom Made Reeds

Wardwell Loop and Doll Pickers

TW-6-32

Emmons Loom Harness Co.
Lawrence, Mass.

Gentlemen: I would like to try the new Custom Made Reed and attach, herewith, my specifications. If this reed is not all that you say I will return it within 10 days and you will cancel the charge; otherwise bill me in the regular way.

Name ..... Address .....

Improve reed accuracy and you improve weave quality

Most important to you—but it's never itemized

THERE'S an item in every A T & M proposal that cannot be put down in black and white . . . but it pays dividends in lowered costs, higher efficiency, faster extraction, and a closer application of the extractor to each particular job. It's the "plus" value provided at no additional cost,—the skill, knowledge, engineering and 89 year experience of A T & M with textile extraction.

•

A T & M engineers are installing larger capacity extractors in some plants—recommending special extractors for carbonizing in others—offering single package extractors to speed one drying process—large jack spool extractors for another—all developments of A T & M experience.

•

A T & M builds hydro-extractors in all sizes from 5" to 60" and larger, with baskets in every machinable metal and with all coatings. Consult A T & M engineers—there is no obligation.

American Tool & Machine Company

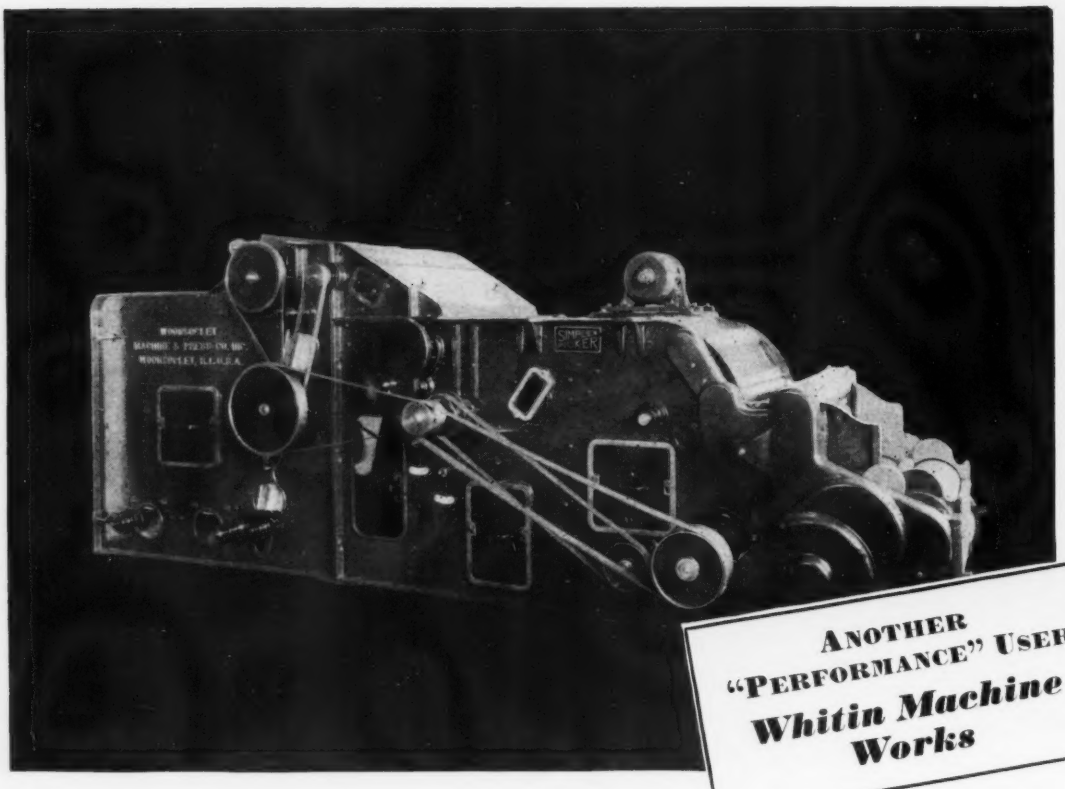
EXTRACTORS

1417 HYDE PARK AVE., BOSTON, MASS.

NEW YORK OFFICE 30 CHURCH ST.

Link suspending centrifugal extractor, motor-driven type. Belt drive, if desired. 40", 60" diameter baskets. Larger sizes on application.

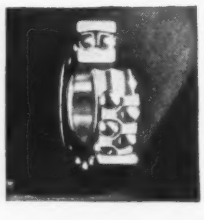
QUALITY OUTPUT WITH SKF'S PLUS PRODUCTION



ANOTHER "PERFORMANCE" USER
Whitin Machine Works

WHERE PERFORMANCE TAKES PREFERENCE OVER PRICE

Pickers that maintain a high average of production plus a lap of uniform quality are usually SKF equipped. Where dependable results are demanded, SKF Performance Takes Preference Over Price. That is why SKF Bearings are on the important bearing locations of the Whitin Picker . . . such as the top and bottom cones, countershaft, calender jack-shaft, spiral gear drive-shaft, beater and fan shafts.



SKF Bearings possess many advantages which promote the efficiency of pickers. Friction in starting and running is reduced to a minimum, speeds are more constant and smooth operation without vibration is attained. Original settings of the beater are maintained, for SKF's show no wear and require no adjustments. The machine also remains remarkably clean for sealed housings prevent lubricant leakage and exclude dust from the bearings.

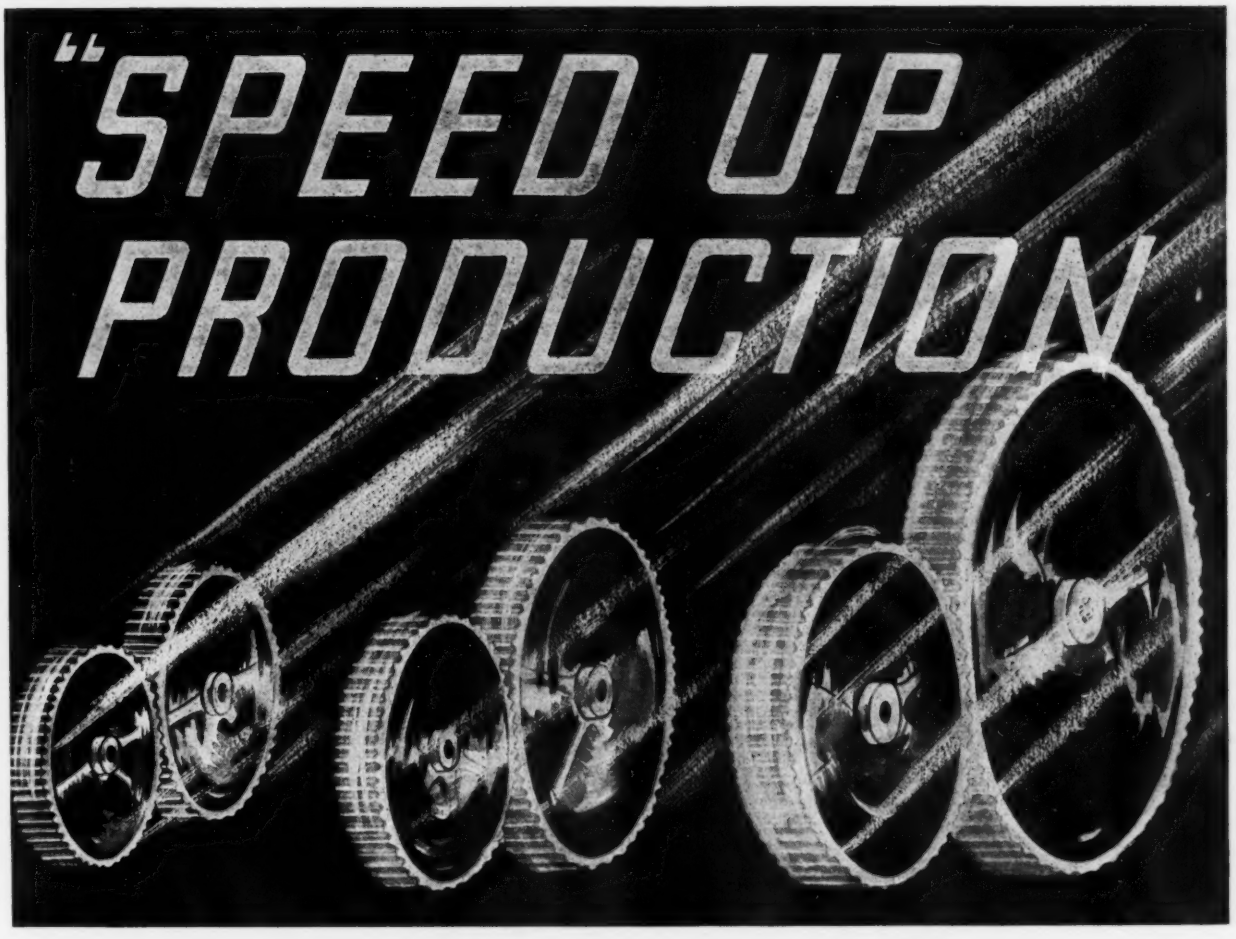
● *You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little.*

2893

SKF INDUSTRIES, INC. 40 EAST 34th STREET, NEW YORK, N. Y.

SKF

Ball and Roller Bearings



and cut UNIT COSTS"

We estimate that most of the Whitin machinery in operation today is being run well above its original intended speed.

How long will it stand this "excess" speed?

For a long time with proper care. Whitin machinery is carefully designed with a big allowance for safety. Moving parts are made of specially selected materials, heat treated to meet particular operating conditions.

BUT—parts do wear out and have to be replaced. And if we are to be responsible for the continued proper operation of Whitin machinery, we must be sure that no "weak links" are introduced through the substitution of other than standard Whitin parts.

You will do yourselves a service by insisting that parts for your Whitin machinery bear the genuine Whitin name. You will do us a service by making it thus possible for us to guarantee with assurance the continued satisfactory operation of our machinery.

And you will be making a graceful acknowledgment of the fact that modern low production costs are due to the tireless efforts of Whitin and other textile machinery manufacturers who have carried the expensive load of designing and engineering the machinery that makes such costs possible.

Buy genuine Whitin-made parts for installation on Whitin machinery.

Fales & Jenks Division

WHITIN
MACHINE WORKS

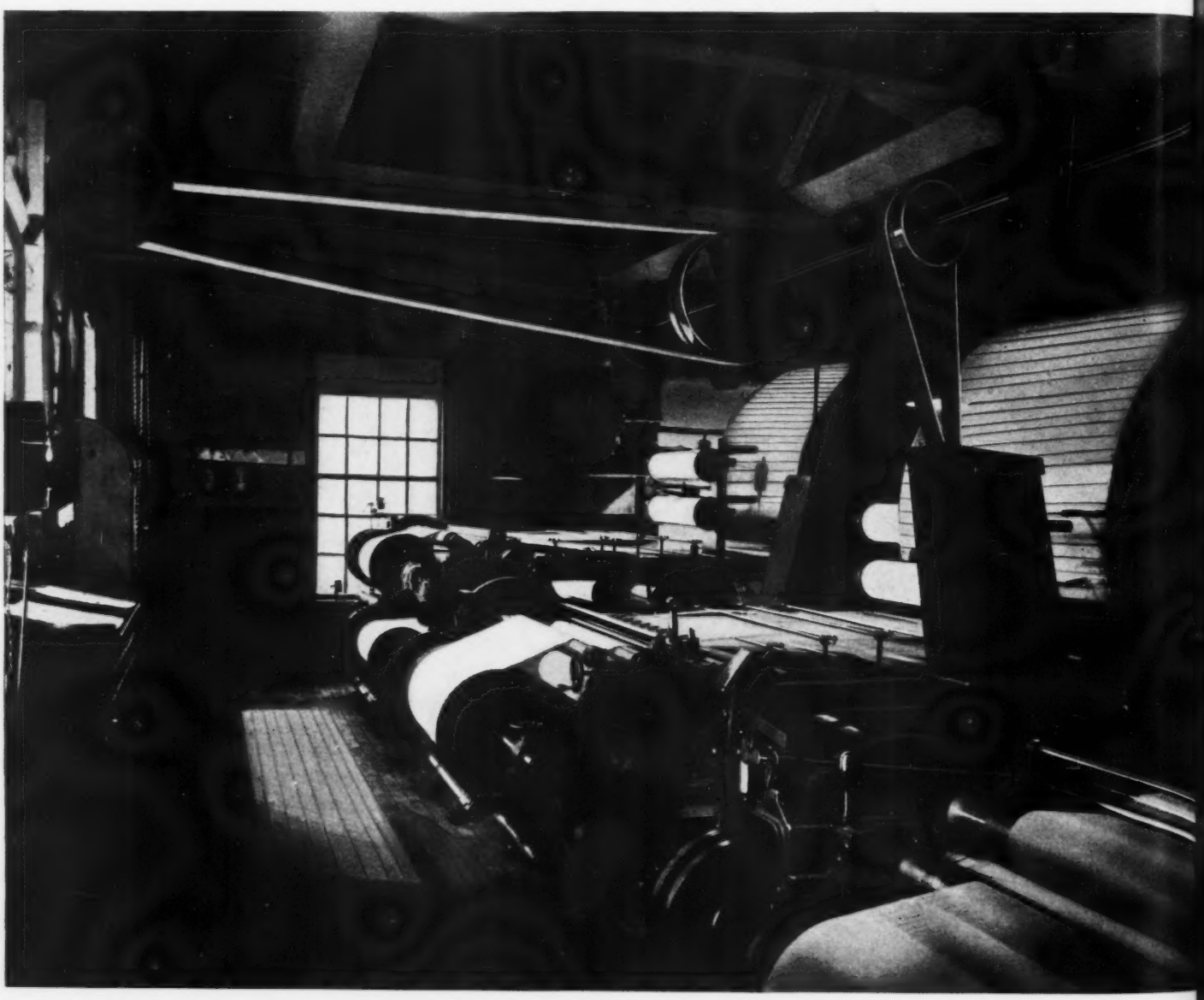
Woonsocket Machine and Press Division

ESTABLISHED 1831

Charlotte, N. C. — Whitinsville, Massachusetts, U. S. A. — Atlanta, Ga.

SLASHER ROOM

.... Operate



GRATON AND KNIGHT

MAIN DRIVE

20 hours a day for a year

and has been shortened only 1½"

THAT will be NEWS to the man who has always figured to take up new belts more than this in the first few days after installation. The whole story of Research Belting development and performance is news of front page importance to every builder and user of textile machinery.

This slasher room main drive is typical of installations now chalking up records for Research Belting performance throughout the field. The 25 hp. motor handles three slashers, one pump, one 7½ hp. fan, one 2 hp. fan and two size tanks. Day in and day out, since the installation of the belt, this room has averaged 20 hours a day. And the Research Belt has been shortened only *once* . . . 1½ inches.

The reasons for such performance are found in new and exclusive manufacturing processes developed by Graton & Knight research engineers to meet modern belt drive demands. These processes are now used in making the entire line of Graton & Knight Belts.

Here, for the first time is **controlled elasticity** by which 75% of belt stretch has been definitely eliminated.

Here is a new **high friction surface** that transmits full rated load immediately at normal tension and bearing pressures.

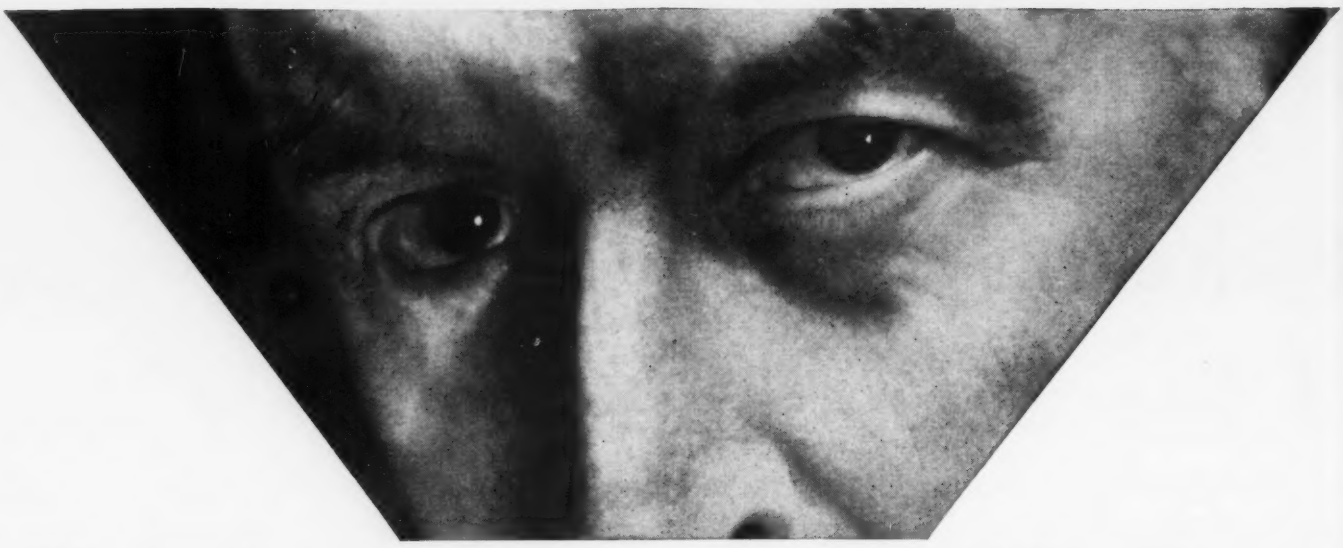
Here is new **flexibility** in the leather and **15% greater strength** that means increased belt life, substantially lowered costs. And for complete protection against moisture, all laps and plies are waterproof cemented by the Tension Cementing Process.

Performance da'a covering practically every type of textile machinery drive clearly demonstrate definite savings in production and maintenance costs through the use of Graton & Knight Research Leather Belting. Our local Power Transmission Man will be glad to present these data and to analyse the possibilities in your own plant. Write direct to Graton & Knight Company, Worcester, Massachusetts.

GRATON & KNIGHT

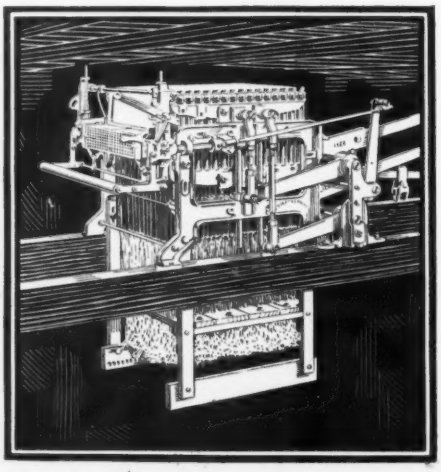
*** RESEARCH ***

LEATHER BELTING



You Can't Control the Market
. . . But what about *costs?*

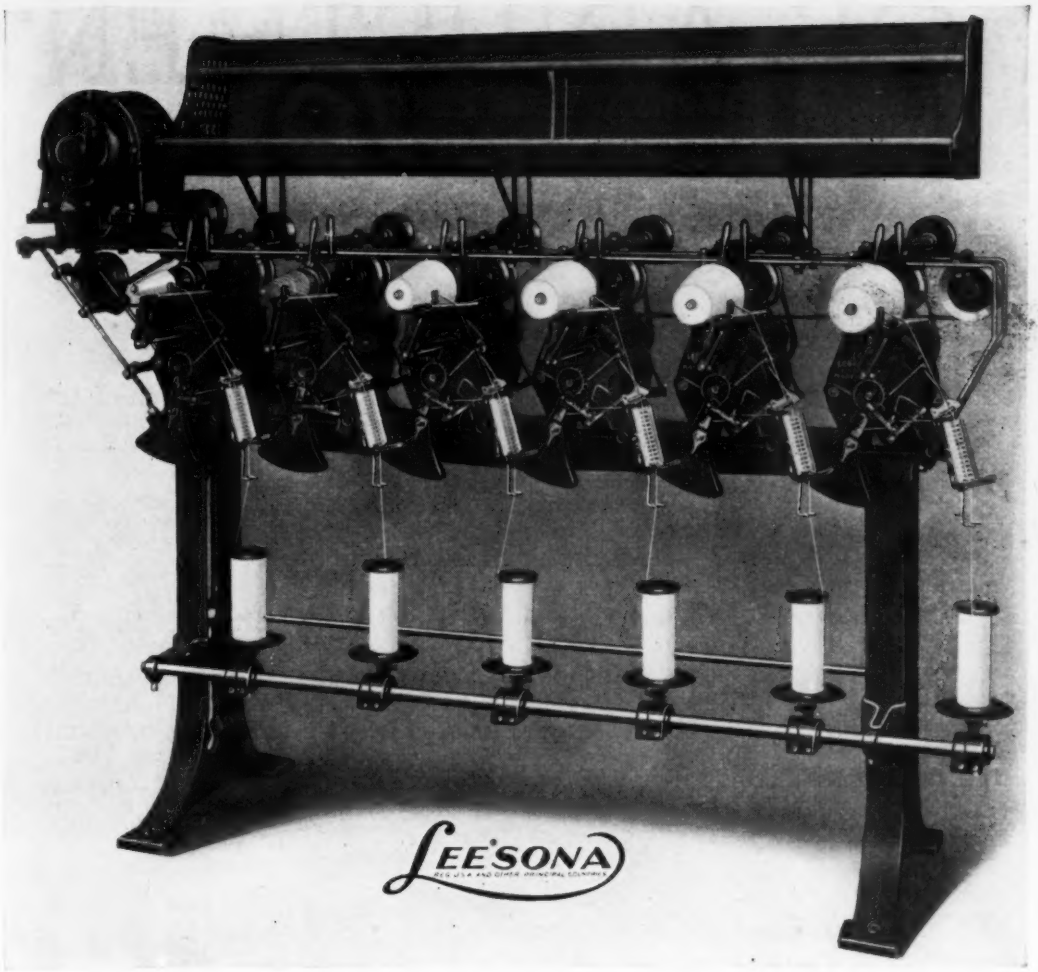
OUT in the market place, profit is struggling for a bare existence. Cut prices can't be controlled—satisfactorily. Now, more than ever, your profit must be groomed and nurtured in your own plant. ❧ That means the stripping away of obsolete equipment. That means that every operation must be studied with the microscope—accurately gauged by the question—"Is it doing its work economically *enough?* Or is it nibbling at profits rightfully ours?" ❧ Halton's Jacquards answer that first question affirmatively! The operating improvements, the low maintenance costs, the versatility of Halton's Jacquards will bring you your whole profit per installation. That is why Stead and Miller, Barrymore Seamless, Sidney Blumenthal are using them! That is why your own proportionate profit per jacquard will increase *in spite of the market,* if Halton's Jacquards become a part of your replacement program. Make them so! At least look through our catalogue—now. Just write!



HALTON'S
JACQUARDS

THOMAS HALTON'S SONS, "C" and Clearfield, Phila., Pa.

Selling Agents H. A. FORBES, P. O. Box 1663, PATERSON, N. J. . Tel. Lambert 385-92W
DENNIS J. DUNN, 5th and College Streets . . . . . CHARLOTTE, N. C.



No. 150 MACHINE

This machine is built on the model of the No. 50 Machine, but with heavier fittings and for a wider range of work.

It is especially adapted for handling ply yarns.

All working parts are built for long service and durability.

UNIVERSAL WINDING COMPANY
BOSTON

333

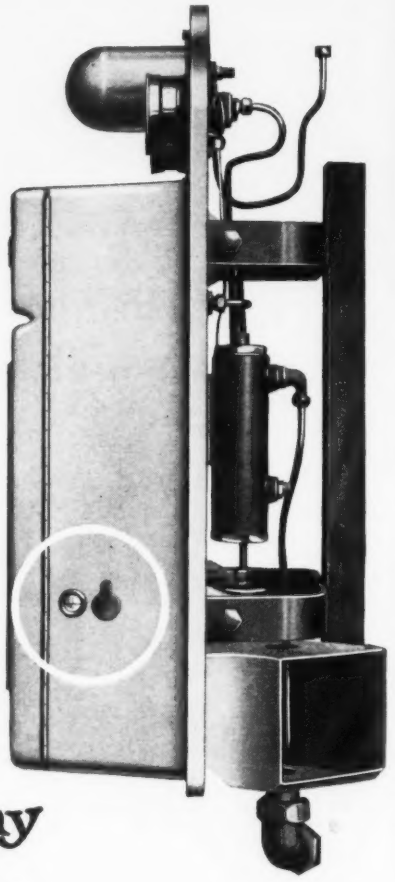
UNIVERSAL WINDERS

EASE OF ADJUSTMENT

THIRD ESSENTIAL OF HUMIDITY CONTROL

The ParkSpray Psychrostat is easier to adjust than your radio. With a single turn of the key, the dial on the side of the instrument may be set to control the relative humidity or regain you desire to maintain.

You can easily check the setting of the Psychrostat by the wet and dry bulb thermometers in the regulator. They constitute a constantly indicating psychrometer, easily read through the glass in the door.



ParkSpray
Certified Climate

Bulletin 226C explains why the Psychrostat is accurate, positive, permanent, easily adjusted. We shall be glad to send it to you.

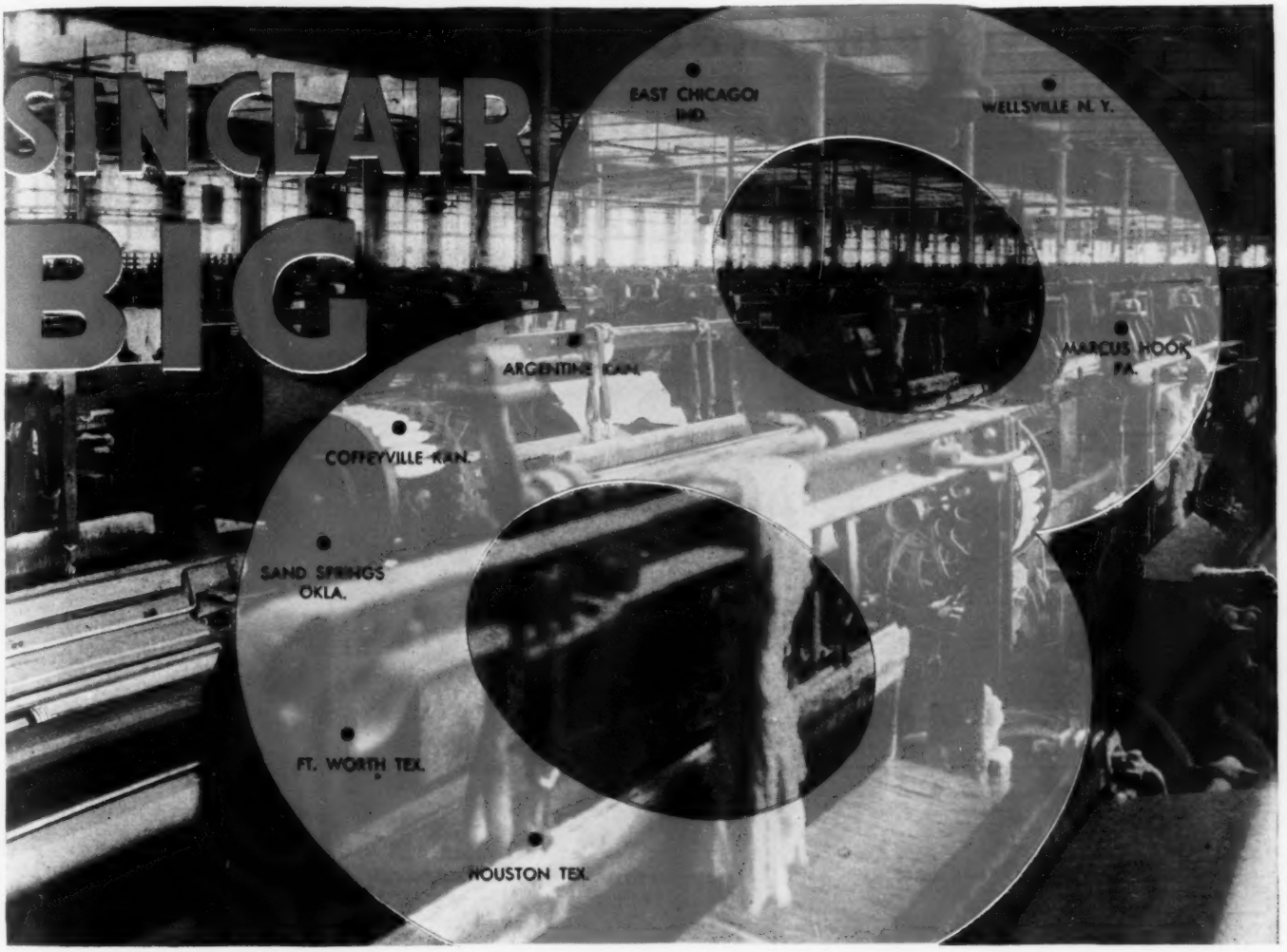
Parks-Cramer Company

FITCHBURG, MASS. CHARLOTTE, N. C.

CANADA: Parks-Cramer Westaway Co., Ltd., Main and McNab, Hamilton, Ont.; 455 Craig West, Montreal, P. Q. CHINA: Elbrook, Inc., Shanghai, Pekin, Tiensten. GREAT BRITAIN, IRELAND: Cook & Co., Manchester, Ltd., 18, Exchange Street, Manchester, England. CONTINENTAL EUROPE: Compagnie Ingersoll-Rand, Paris, France. INDIA: Ingersoll-Rand (of India) Ltd., Bombay, Calcutta. MEXICO: Sr. Don Fernando Caraves, Apartado 1100, Mexico City.

ADEQUATE HUMIDITY — ACCURATELY CONTROLLED

1,500,000,000 gallons last year from the



From the bottom of the list of refiners in output of lubricating oil, to a position in which last year it sold 1,500,000,000 gallons of products—such is the history of Sinclair during the past dozen years.

Such phenomenal growth can come only from an outstanding ability to deliver an exceptionally high grade of petroleum products inexpensively and promptly to any part of the country. Sinclair's eight great refineries are among the most strategically located plants of their kind for serving American industries, railroads and steamship lines. Fifty-two American railroads, including six great transcontinental systems use Sinclair oils and greases. The United States Government 1931-32 Navy Awards gave Sinclair as large an order for lubricating oil as was given to all the other lubricating companies combined.

In the textile field the worth of Sinclair lubricating advice is recognized by many operators. The Sinclair line of petroleum products includes lubricants which meet all of the varying requirements of textile machinery.

Our engineering service is at your command. Sinclair engineers are daily consulting with important oil users, assisting them to solve knotty lubricating problems. Call or write our nearest office or any local Sinclair Agency. Sinclair Refining Company (Inc.), New York, Atlanta, Chicago, Houston, Fort Worth, Kansas City. Sinclair Refining Company of California, Los Angeles.

SINCLAIR MINSTRELS . . on 36 NBC Stations every Monday evening

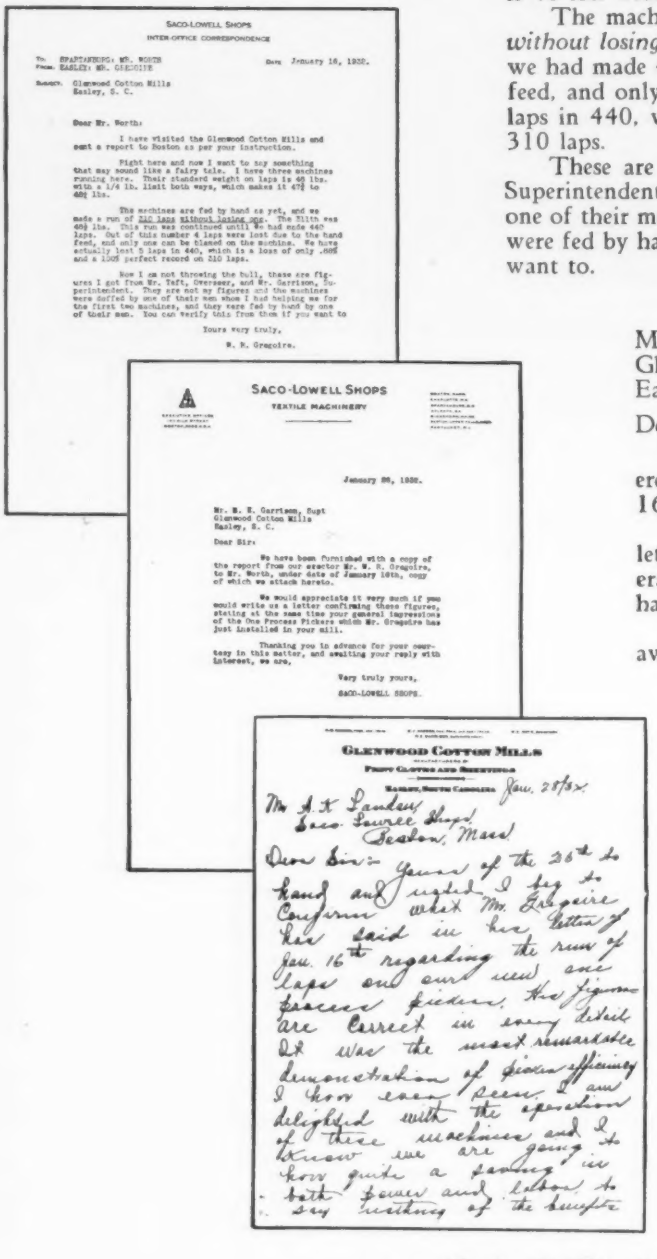
SINCLAIR

Copyrighted 1932 by Sinclair Refining Company (Inc.)

GREASES **INDUSTRIAL OILS**

"This is no fairy tale," said the Erector "It was a remarkable demonstration of Picker Efficiency," said the Superintendent

THESE LETTERS TELL THE STORY



SACO-LOWELL SHOPS
INTER-OFFICE CORRESPONDENCE

To: SPARTANBURG, MR. WORTH
From: EASLEY, MR. GREGOIRE
Date: January 16, 1932.
Subject: Glenwood Cotton Mills
Easley, S. C.

Dear Mr. Worth:

I have visited the Glenwood Cotton Mills and sent a report to Boston as per your instruction.

Right here and now I want to say something that may sound like a fairy tale. I have three machines running here. Their standard weight on laps is 48 lbs. with a 1/4 lb. limit both ways, which makes it 47¾ to 48¼ lbs.

The machines are fed by hand as yet, and we made a run of 310 laps without losing one. The 311th was 48½ lbs. This run was continued until we had made 440 laps. Out of this number 4 laps were lost due to the hand feed, and only one can be blamed on the machine. We have actually lost 5 laps in 440, which is a loss of only .88% and a 100% perfect record on 310 laps.

These are figures I got from Mr. Loftis, Overseer, and Mr. Garrison, Superintendent. They are not my figures and the machines were doffed by one of their men whom I had helping me for the first two machines, and they were fed by hand by one of their men. You can verify this from them if you want to.

Yours very truly,
W. R. Gregoire.

SACO-LOWELL SHOPS
TEXTILE MACHINERY

January 26, 1932.

Mr. M. E. Garrison, Supt
Glenwood Cotton Mills
Easley, S. C.

Dear Sir:

We have been furnished with a copy of the report from our erector Mr. W. R. Gregoire, to Mr. Worth, under date of January 16th, copy of which we attach hereto.

We would appreciate it very much if you would write us a letter confirming these figures, stating at the same time your general impressions of the One Process Pickers which Mr. Gregoire has just installed in your mill.

Thanking you in advance for your courtesy in this matter, and awaiting your reply with interest, we are,

Very truly yours,
SACO-LOWELL SHOPS.

GLENWOOD COTTON MILLS
PRINT CLOTHS AND SHEETINGS
EASLEY, SOUTH CAROLINA Jan. 28/32

Mr. A. H. Landers
Saco-Lowell Shops
Boston, Mass.

Dear Sir:- Yours of the 26th to hand and noted. I beg to Confirm what Mr. Gregoire has said in his letter of Jan. 16th regarding the run of laps on our new one process pickers. His figures are correct in every detail. It was the most remarkable demonstration of picker efficiency I have ever seen. I am delighted with the operation of these machines and I know we are going to have quite a saving in both power and labor, to say nothing of the benefits

Dear Mr. Worth:

I have visited the Glenwood Cotton Mills and sent a report to Boston as per your instruction.

Right here and now I want to say something that may sound like a fairy tale. I have three machines running here. Their standard weight on laps is 48 lbs. with a ¼ lb. limit both ways, which makes it 47¾ to 48¼ lbs.

The machines are fed by hand as yet, and we made a run of *310 laps without losing one*. The 311th was 48½ lbs. This run was continued until we had made 440 laps. Out of this number 4 laps were lost due to the hand feed, and only one can be blamed on the machine. We have actually lost 5 laps in 440, which is a loss of only .88% and a 100% perfect record on 310 laps.

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SACO-LOWELL SHOPS.

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Boston, Mass.

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Yours very truly,
M. E. GARRISON, *Supt.*

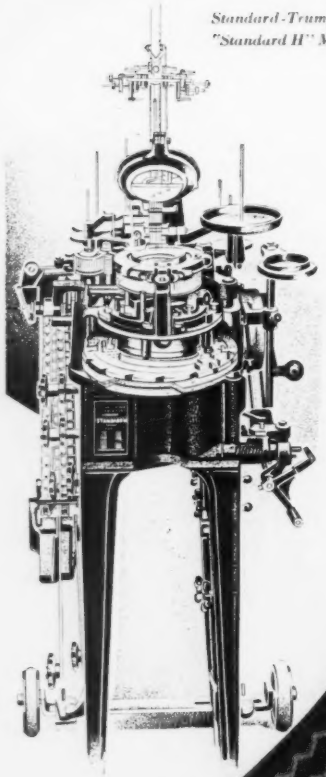
SACO-LOWELL

147 MILK STREET, BOSTON, MASS.

CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

"To err is human" . . . so humans are not depended on to make Torringtons. These are machine-made needles . . . absolutely uniform, accurate in every dimension . . . always. Remove one more "variable" from your production problems by keeping all machines all-Torrington equipped.

TORRINGTON *SPRING BEARD* NEEDLES

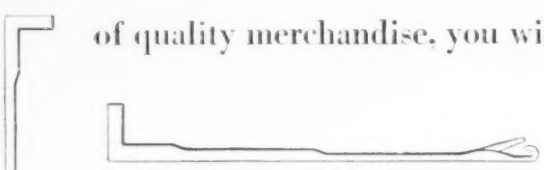


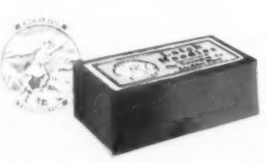
Standard-Trump Bros.
"Standard H" Machine.

"BY THE COMPANY THEY KEEP"

Holeproof Hosiery

This sock was made by the Holeproof Hosiery Company. It was knit on a Standard-Trump Bros. "Standard H" machine. And this machine, of course, was equipped with Torrington needles. Back of quality merchandise, you will invariably find quality equipment.





The Torrington Company

ESTABLISHED 1866

Torrington, Conn., U.S.A.

BRANCHES:

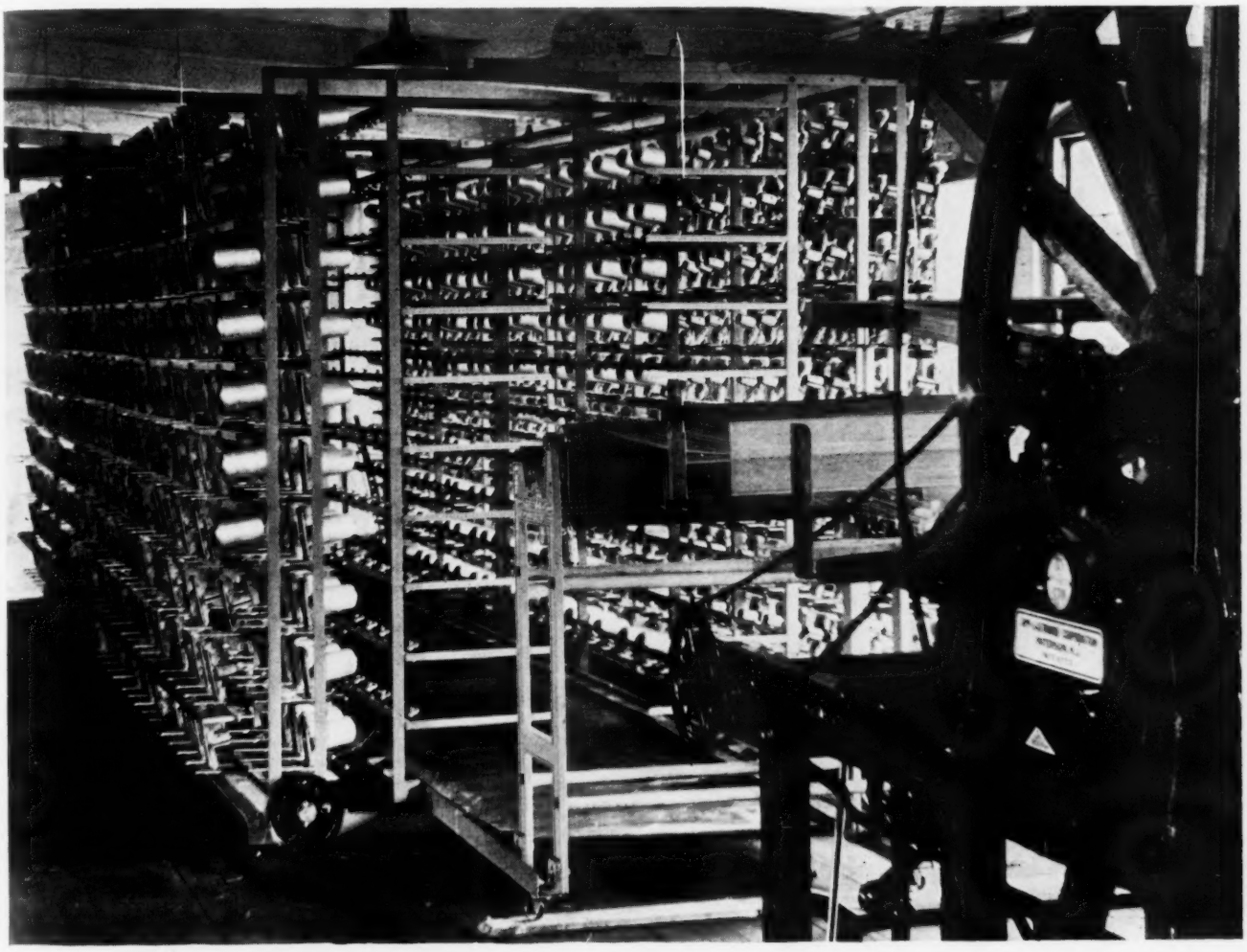
THE TORRINGTON COMPANY, 1640 FAIRMOUNT AVE., PHILADELPHIA
THE TORRINGTON CO., INC., 140-144 W. 22ND STREET, NEW YORK, N. Y.
LOS FABRICANTES UNIDOS, 964 CALLE BELGRANO, BUENOS AIRES

FACTORIES AT:

TORRINGTON, CONN. • UPPER BEDFORD, QUEBEC
COVENTRY, ENGLAND • AACHEN, GERMANY

TORRINGTON *Latch* NEEDLES

The MODERN METHOD of warping SILK, CELANESE and RAYON YARNS



Patents applied for

MAGAZINE WARPER CREEL WITH TENSION DRESSER

(shown above)

Also SINGLE UNIT CREEL with TENSION DRESSER

Silk warping and Beam warping systems from cones, tubes or bottle bobbins.

Speed up your Warpers.

Increase your production.

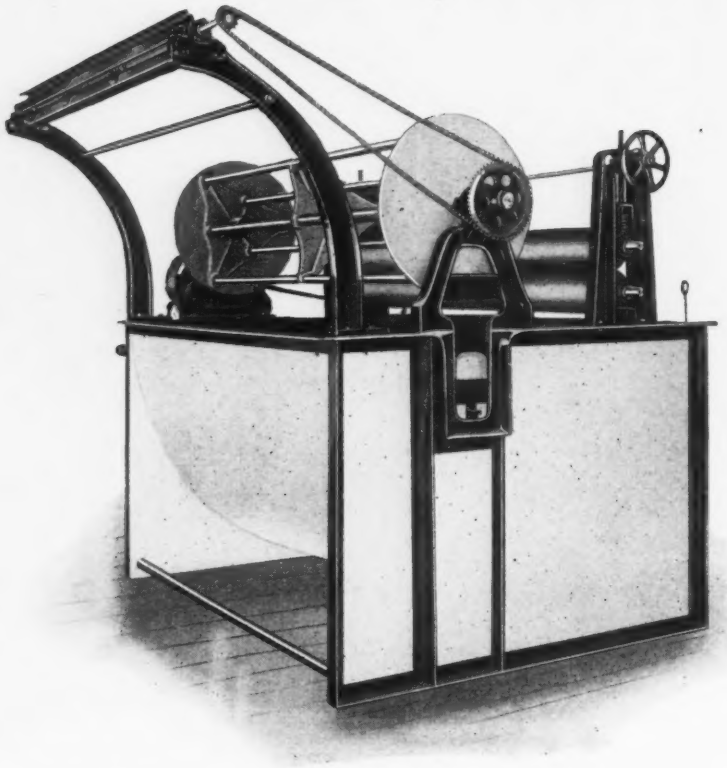
Write for photographs and data.

Inside or outside yarn sheet.
Whirl Tensions: Gravity application.
Electrical Broken End Detector.
Perfect transfer from empty to full cone.
No breaks caused by strain on yarn.
Uniform tensions: No ironing effect.
Better slashing and weaving qualities.
Handling of fine yarns a specialty.
Yarn speed 150 to 200 yds. per minute.
On MAGAZINE CREEL standard spacing for cones.
30% to 40% saving on floor space without sacrificing convenient working height.
SILK WARPING SYSTEM: Creel on trucks moved under full load by girl operator, to alignment with lease reed.
COTTON WARPING SYSTEM: Creel stationary.

Pioneers in Warper Creel Development: Still Leading the Field.

WARP COMPRESSING MACHINE CO. *Builders* **Worcester, Mass., U. S. A.**

ASK YOURSELF—Is Any Dye-house Up-to-date WITHOUT Hunter Solid Metal Dye Kettles?



Hunter All Metal Kettles mark the end of wooden Kettles, as surely as Iron-Clad Mills and Washers have supplanted the former wooden units. An engineering development radical in principle — unique in results. Completely eliminates usual repairs, no boiling out, nothing to wear, stainless, leakproof, and wearproof. All the advantages a modern Kettle should have.

Is Any Kettle Up-to-date Unless It Eliminates Repairs?

Entirely Metal save for the adjustable rubber squeeze rolls, the Kettle is fabricated of pure nickel, hot rolled on steel, pure nickel partition, false bottom, triangular reel and doffing reel. No wood to rot, leak or absorb dyes, no flimsy lining to buckle and leak. Nothing to leak, nothing to wear, no corrosion, no chipping. Complete elimination of repairs. No lost machine time.

Is Any Kettle Up-to-date Unless It Speeds Up Operation?

There is no boiling out in the new Hunter Kettle. When changing colors, simply rinse quickly and you are ready for the next batch. No matter how delicate your colors or how mixed, you can go from one set to the next with complete assurance. No off-shades, no re-dyes. Hours of time saved over previous methods.

Is Any Kettle Up-to-date Without Adjustable Squeeze Rolls?

Hunter equips its new all metal unit with handwheel adjustable rubber squeeze rolls—all adjustments to pressure can be made while the Kettle is in operation. If you wish, you can use the new Hunter for washing off without transferring goods to a Washer—or, you can raise top squeeze roll, and use bottom roll as usual whip roll.

Is Any Kettle Up-to-date Without These Other Features?

All Hunter Nickel-Clad Kettles are further equipped with roller bearings and roller chain drives throughout, pure nickel hand rod to drain plug, two combination rubber and nickel leak-proof drain plugs, nickel splash boards when desired, pulley or impregnated motor drives, rubber painted exterior —and all other features that add to Hunter value and Hunter efficiency.

A Size For Any Need

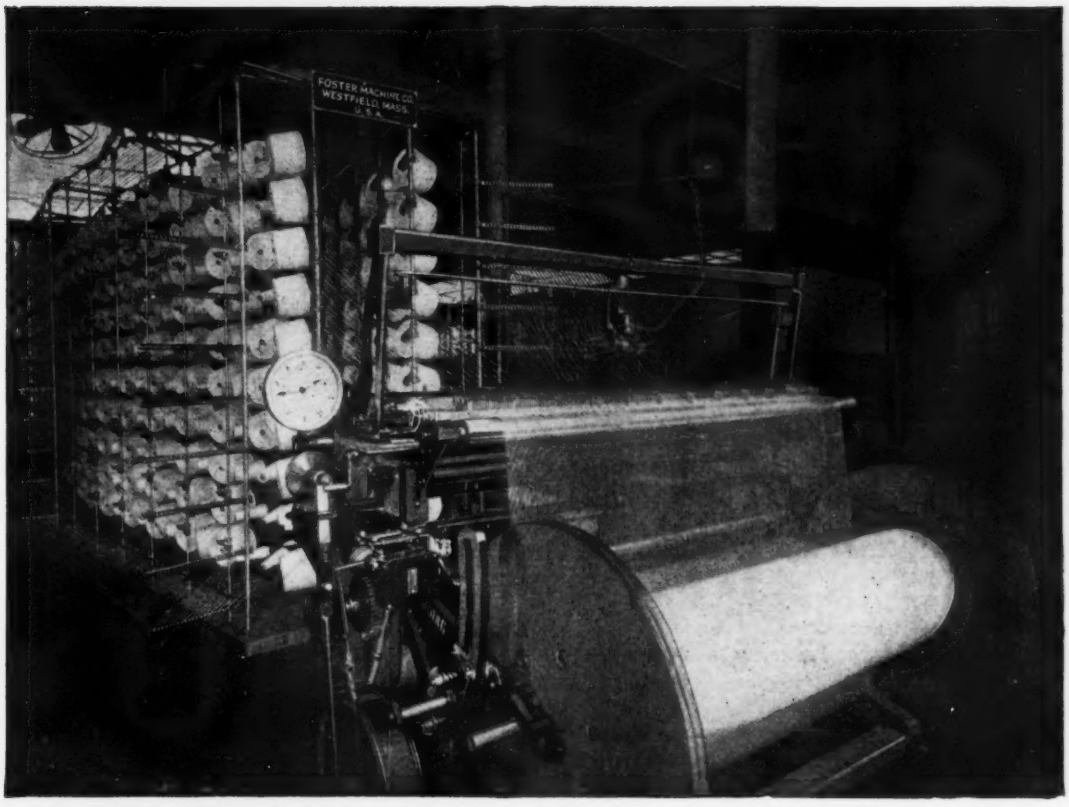
Reasonable Prices. Models and Shapes adapted to every individual requirement. There is a Hunter All Metal Piece Dye Unit for any individual requirement at prices within the budget of any mill. And there is a model for any piece dye task. Your request on your own letterhead brings you full data.

Other Hunter All Metal Finishing Units include Iron-Clad Fulling Mills and Cloth Washers, Individually Motor Driven Stock Dryers. Automatic Woolen Tenters. Patented Range Drive Cloth Carbonizing Units and Chrome Nickel Dyeing Equipment.

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847

NORTH ADAMS, MASS.



FOSTER
CONE WARPING SYSTEM

The following points of superiority of the Foster Cone Warping System have been demonstrated under competitive conditions.

In the Cone Winding Process using the Foster Model 102 Winder—more pounds produced by the operative with the resulting lower winding costs per pound of yarn.

Economy in Floor Space—the highest possible winding speed considering delicate yarn conditions.

Sturdy machine design and construction—minimum cost for replacements.

Operating Conditions—end piecing movements reduced promoting efficiency and preventing operative fatigue.

In the Warping Process using the Foster Magazine Cone Creel—free drawing from the cone with exact even tensioning of each strand, eliminating tight and loose warp ends.

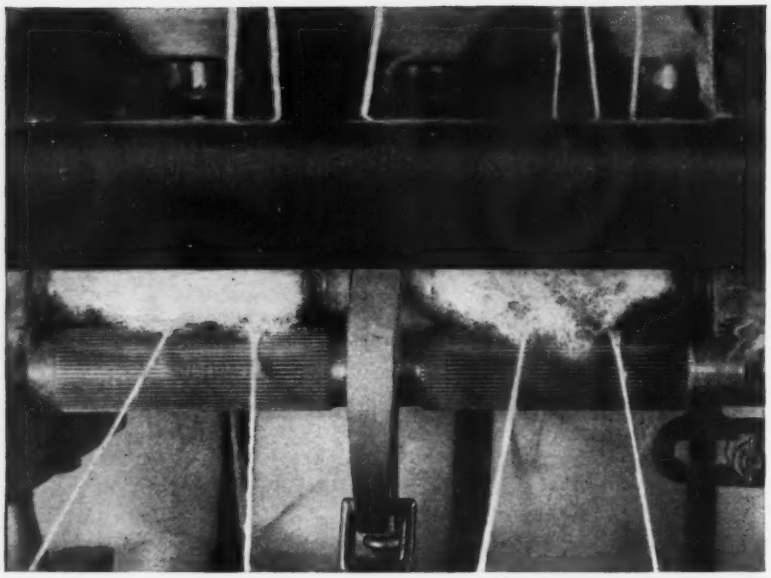
High Warping Speed without Stoppage for recreeling.

Each cone empties completely, eliminating stale yarn and waste.

Cones hold up to 4½ pounds of yarn (depending on the density of the material). This is an important item in lowering warping costs.

The Foster Cone Warping System is in operation in Cotton, Worsted, and Woolen Yarn and Weaving Mills.

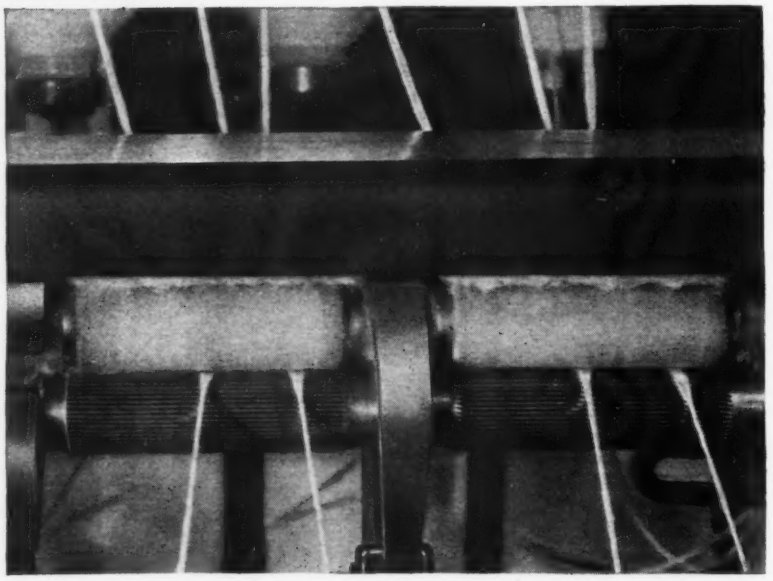
FOSTER MACHINE COMPANY
WESTFIELD, MASS.



EYEBROWS?

SEAMLESS CORK COTS (*below*) *after running exactly the same length of time as the ordinary rolls at the left, show practically no eyebrows. The waste is back on the clearer board where it belongs.*

ORDINARY ROLLS (*above*) *produce eyebrows and allow waste to fall into the work, thus causing bunches, uneven yarn, and excessive end breakage.*



NOT WITH CORK ROLLS

Evener yarn and less end breakage with these money-saving Seamless Cork Cots

HERE'S the solution to the troublesome and costly "eyebrow" problem. Mill men will tell you "Armstrong's Seamless Cork Cots have done away with eyebrows."

The two photographs—one showing ordinary rolls and the other, cork rolls—clearly illustrate this point. These rolls on the same frame were allowed to run the same length of time after the boards were cleaned.

The high coefficient of friction of Armstrong's Seamless Cork Cots places the clearer waste on the clearer board where it belongs. Waste won't drop into the work. Production is increased by preventing excessive end breakage. The quality of the work is improved by reducing the number of slubs or bunches.

Mills using Armstrong's Seamless Cork Cots today (and there are more than a hundred) have reduced their roll covering costs an average of more than 60%. Today more than 5,000,000 spindles in mills spinning from 2s to 120s are equipped with Armstrong's Seamless Cork Cots—the modern money-saving roll covering material. Is your mill among them?

Send for the new free book "The Facts About Armstrong's Seamless Cork Cots," giving cost studies based on actual mill records. Address Armstrong Cork Company, 924 Arch Street, Lancaster, Pennsylvania.

Armstrong's (A) Product

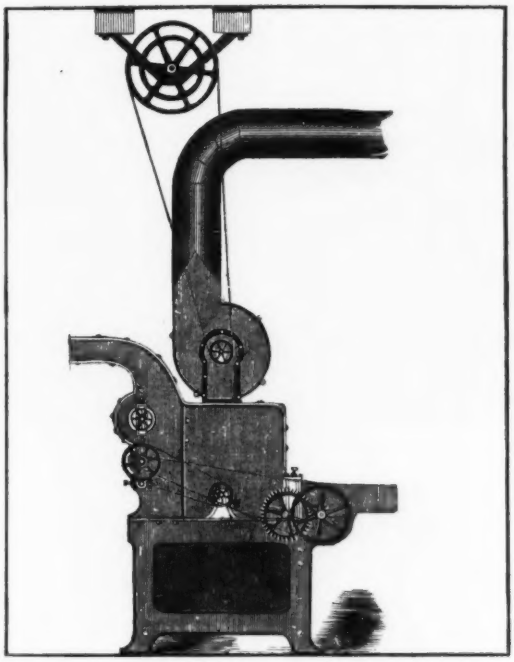
Armstrong's SEAMLESS *Cork Cots*

For Spinning and Card Room Rolls

Textile Machines

Pioneered by Sargent

1865
Burr Pickers by Sargent



From an old wood cut dated 1865, taken from the Sargent files. Showing a Sargent Burr picker built for the Textile Industry in 1865.

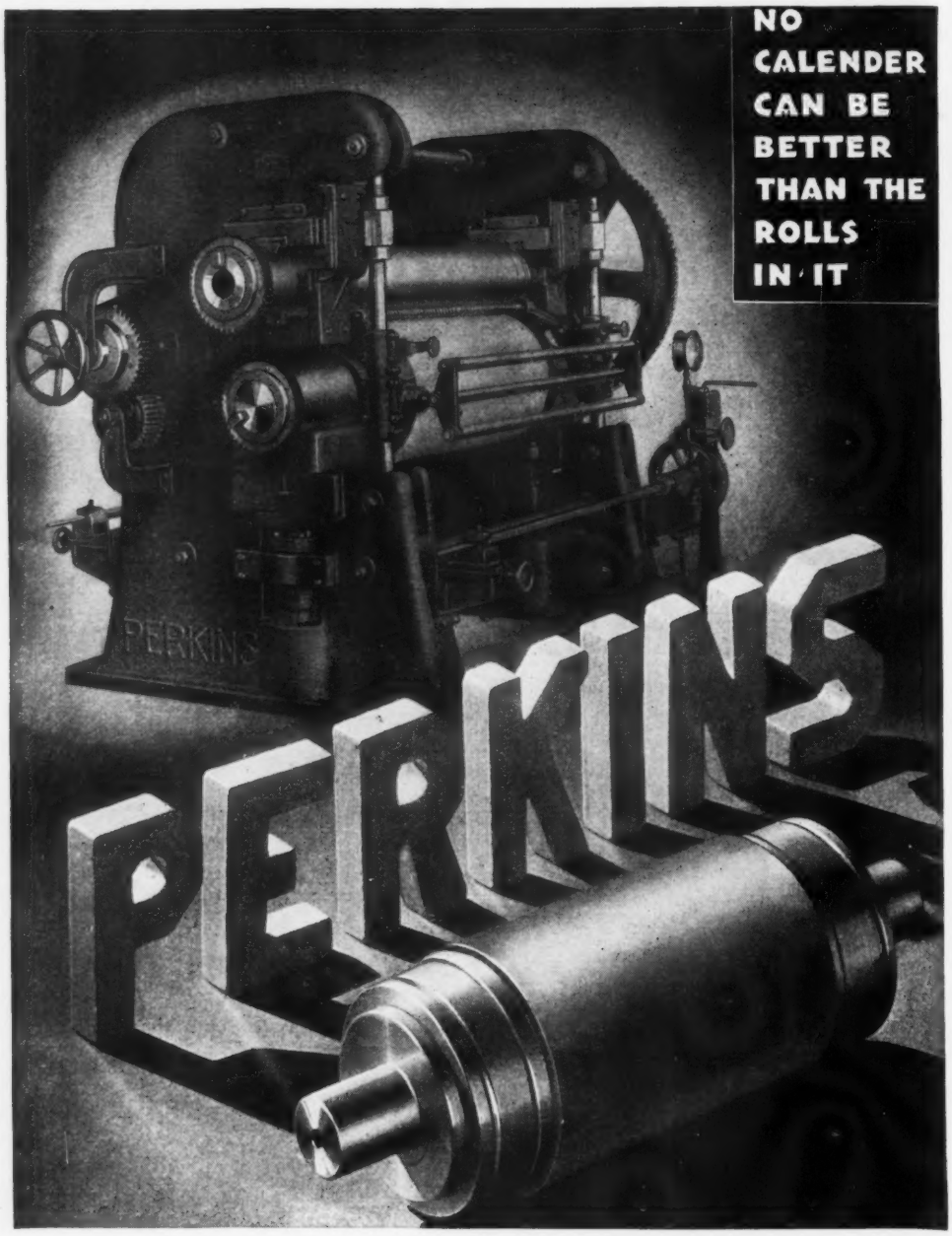
1932
Burr Pickers by Sargent

The modern Burr Picker as designed and built by Sargent. Ball bearings on all moving parts. Built to operate at high speeds and with high production capacities.

Multiplex Burr Picker—This machine performs four separate cleaning operations: (a) heavy droppings of loose extraneous particles thrown by main cylinder through screen underneath; (b) large burrs, seeds, etc., removed by first guard and deposited on floor behind machine; (c) smaller particles of vegetable matter removed by the second guard and dropped to the floor beside the machine; (d) dust, broken particles of straw, shives, etc., carried away by the fan.

C. G. SARGENT'S SONS CORP.

Founded in 1852 **Graniteville, Mass.**

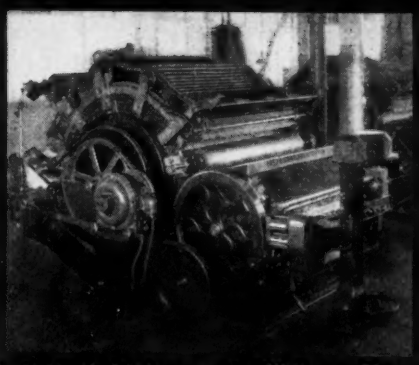


Perkins Calenders are distinguished by extreme ruggedness and flexibility. This Schreiner Calender, employing an engraved steel roll, can be used also as a charmeuse or glazing calender, using a smooth steel roll. It is typical of Perkins' careful design and construction.

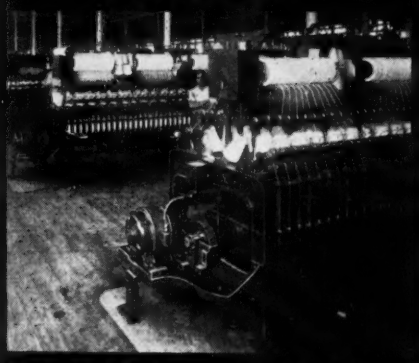
B. F. Perkins & Son, Inc., Holyoke, Mass.

Rolls—Cotton, Paper, Husk, Combination, Cotton and Wool—Calenders, Drying Machines, Starch, Water and Tommy Dodd Mangles, Dyeing Machines, Padders, Ranges, Scutchers, Singers, Squeezers, Tenters, Washers, Winders

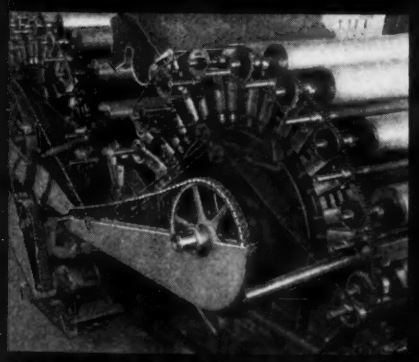
CHAIN DRIVES GIVE
POSITIVE ACTION
HIGH EFFICIENCY
OVERLOAD CAPACITY
FLEXIBILITY OF DESIGN
LONG LIFE



Individual Motors and Whitney Chain Drives give compactness and cleanliness to cotton cards.



Whitney Chain Drives on spinning frames in a 100% Whitney equipped mill.



Production and quality are maintained on this double finisher by Whitney Silent and Roller Chain Drives.

Specify Chain Drives by Whitney

In the textile industry WHITNEY Chain Drives are found wherever a constant and efficient medium of power transmission is needed. With individual motors or with group drives they insure an even flow of power that maintains production and the quality of the product.

The flexibility of application possible with WHITNEY Chain Drives allows the use of short shaft centers and small driving pinions. Also, the fact that they do not have to be installed endless makes for simplicity of design. Textile engineers and mill owners alike value their inherent long life and freedom from excessive maintenance and replacement expense.

WHITNEY engineers are experienced in the problems of textile machine drives. They are at your service without obligation. Write for Catalog V-100E WHITNEY Silent Chain and Sprockets.

THE WHITNEY MFG.CO. Hartford, Conn.

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133 S. 36th Street

SAN FRANCISCO
A. H. Coates Co.
1142 Howard Street

WHITNEY SILENT AND ROLLER CHAIN DRIVES

FOR POSITIVE POWER TRANSMISSION

"Tell us what you want your rubber rolls to do. We'll make TENSILASTICS that will do it...right."

Dr. A. W. Co, R. Sc.

"A rubber roll that will perform perfectly in one mill may be a total loss in another. Not because there's anything wrong with the roll,—but because the conditions it must cope with are different.

"There's a lot more to a rubber roll than just a chunk of rubber on a shaft.

"Tensilastics are a happy combination of rubber know-how and textile know-how. We've spent over 40 years studying rubber reactions under the varying conditions found in textile mills. Our technicians have gone into the mills to study at first hand the things rubber rolls are up against. We've built rolls and torn them apart; tested them and analyzed them; all the time acquiring data, information and skill in making rubber rolls that will do the things you expect as you expect them to.

"Now we can say to you, confidently,—tell us what you want your rubber rolls to do, in bleach house, dye house and finishing room. We'll build Tensilastic Rubber Rolls that will do the job right! They won't cost you any more than ordinary rolls. *But they will save their cost over and over again in satisfactory, economical performance, in long time service, in reduction of replacements, in the elimination of spoiled yardage and rejects.*

"You needn't know a thing about rubber roll specifications to get full rubber roll satisfaction. You can stick to your textile job and leave the rubber roll end to us. If you say so, we'll send a man who knows your angle as well as ours. He'll study your production set-up and determine the type of rubber roll that will fit it best. And when he decides on the specifications, we'll supply you with Tensilastics that can be guaranteed to give you full satisfaction.

"In short,—tell us what you want your rubber rolls to do...we'll make Tensilastics that will do it...right."

Send for your copy of new booklet, "Rubber Rolls in the Textile Industry"

TENSILASTIC

RUBBER ROLLS *for the* TEXTILE INDUSTRY

Laboratory Designed and Processed by

Farnham, Que. AMERICAN WRINGER CO., Inc., *Woonsocket, R. I.*

Tx-10

NEW YORK
461 Eighth Avenue

CHICAGO
33 North La Salle Street

PORTLAND, ORE.
Walter S. Hodges
Lewis Bldg.

If the new year demands new economies . . . . . *start with* TUFFER CARD CLOTHING

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

THAT'S an economy you can depend on. It has been proved by mills for over 60 years. Always dependable, Tuffer Card Clothing is given still longer life by a new, *patented foundation which resists stretching while on the card . . . firmly supports the wire . . . and eliminates redrawing of cylinder and doffer fillets.* Steel is brought all the way from Sweden to make possible a tougher, stronger wire without brittle points.

Long life is one important economy. But that's not all. Faster, smoother carding—Even, uniform laps. Fewer machine stops. All these savings have a far reaching effect in reducing mill costs. And all are made possible by the fine, painstaking construction of Tuffer Card Clothing.

Start the year with Tuffer on your cards for greater net profits. Our main office or branch offices listed below will gladly cooperate—write.

Howard Products

CARD CLOTHING
NAPPER CLOTHING
WIRE HEDDLES
CYLINDER FILLETS
DOFFER FILLETS
HAND STRIPPING CARDS
STRIPPER FILLETS
BURNISHER FILLETS
EMERY FILLETS
STRICKLES

TOP FLATS RECOVERED

Complete equipment for recovering top flats and Lickerins has been established at our Branch Factory, 244 Forsyth St., S. W., Atlanta, Ga. Prompt service is assured.

Extra sets of flats can be loaned to mills. A complete stock of Howard products are also carried at this plant ready for quick delivery.

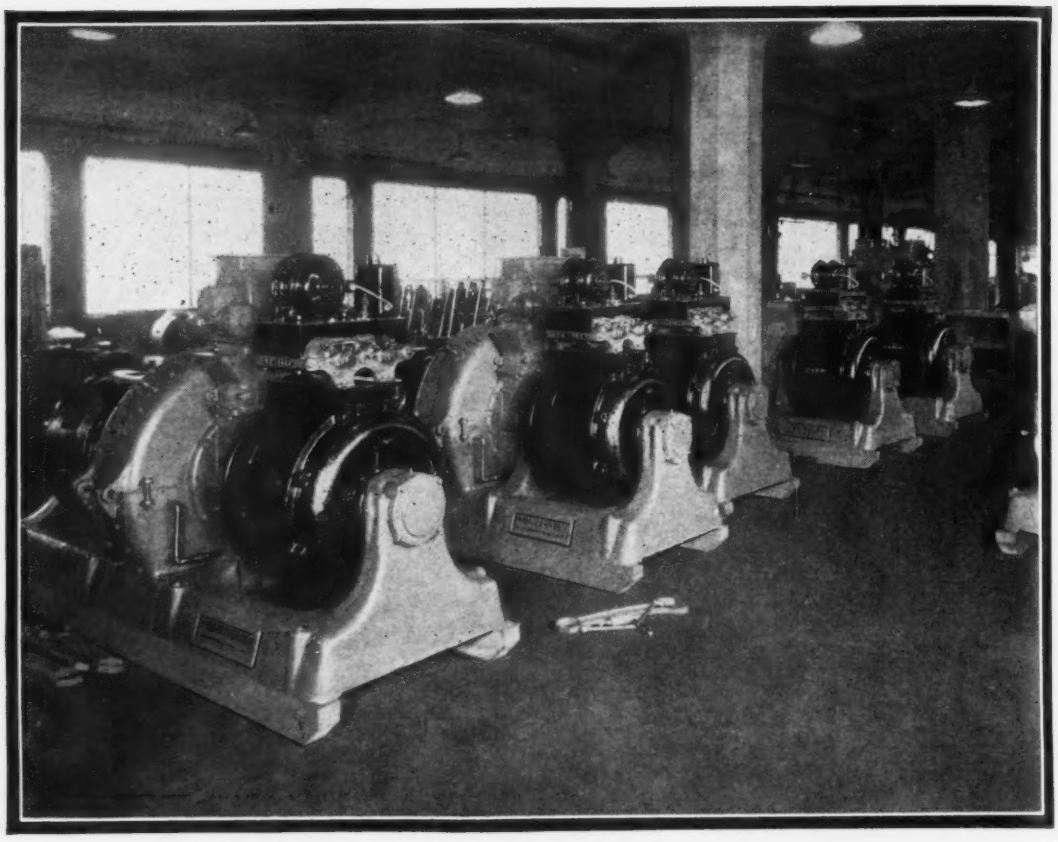
If you are not receiving "The Howard Way," an interesting, informative monthly publication, write and ask to have your name added to the mailing list.

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Branch Plant
244 Forsyth St., Atlanta, Ga.

Branch Offices
Philadelphia, Pa. Dallas, Texas



A production row of Bauer Bros. Wood Pulpers. LEWELLEN transmissions control feed of materials in each unit.

WHEREVER ACCURATE VARIABLE SPEED CONTROL *is* REQUIRED

Speed of production, in many textile processes, is the principal determining factor of quality — *and Quality determines price!*

To be able to operate machines at the *exact speed* required for variable materials and processes, then, is an important asset for any textile manufacturer.

Prominent makers of textile machinery, including the manufacturers of *The Butterworth Sanforizer*, have long since discovered that, while all variable speed transmissions operate on the same general principles, THE LEWELLEN has proven to be *the best investment*. Longer life, freedom from costly interruptions in service and lower upkeep cost — all contribute to this accomplishment.

Want us to prove these statements? Just mail the coupon. We will do the rest. No obligation, of course.

LEWELLEN MFG. CO.
Columbus, Indiana

Please send your catalog and tell us why you believe The LEWELLEN Variable Speed Transmission is the best speed controlling device for our industry.

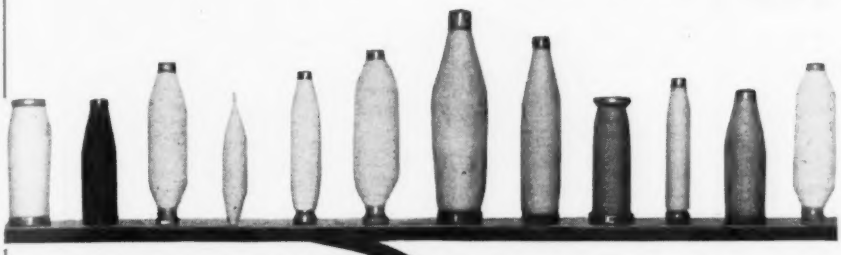
Name .....

Company .....

Address .....

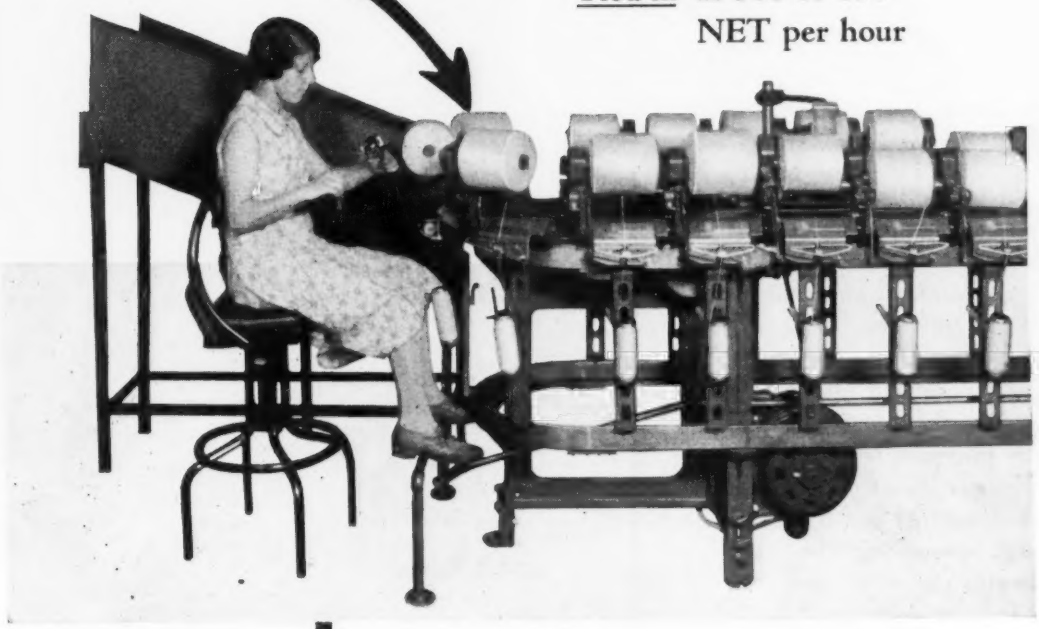
THE *Lewellen*
MANUFACTURING CO.
COLUMBUS INDIANA

ABBOTT CIRCULATING WINDER

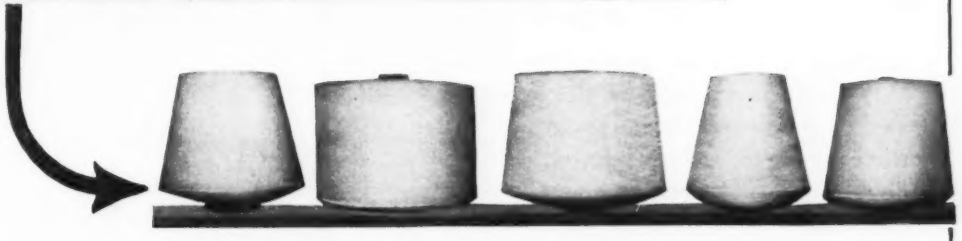


All sorts of bobbins
Wool-Worsted-Cotton
Warp or
Filling wind

Tied in at 500 to 650
NET per hour



WINDING
at speeds
to 800 yards
per minute



Cones or Cheeses

With *Low cost per spindle*

Gives *Lowest cost per pound of any winding or spooling system*

ABBOTT MACHINE CO.

WILTON, N. H.

Southern Representative: A. S. Thomas, Greenville, S. C.

Meet a new member of the family...

The CR1062-B3 Loom Switch

WE NOW introduce to you the new CR1062-B3, 2-hp. loom switch that, like its brother the CR1062-C2, 7 1/2-hp. switch, has every feature textile men asked for. It meets the demand for a dependable loom switch of low horsepower rating.

It is moisture-resisting and dust-tight without packing.

It trips free on overload. New and improved overload devices in both the CR1062-B3 and CR1062-C2 protect the motor as well as the driven machine against injury.

The new switch is provided with a Textolite molded handle operative from the front, and fully protected against mechanical injury or accidental operation. The nameplate clearly indicates the "on" and "off" positions.

Installation costs are cut to the minimum by the enclosed design of the overload devices, permitting effective group fusing; the convenient pedestals for either single or double switch mounting; and the convenience of being able to bring line wires as large as No. 8 directly to terminals at the bottom of the switch.

Investigate the General Electric family of loom switches. One member will meet the exact requirements of your loom motor. We shall be glad to send you a copy of our bulletin GEA-1522A, describing the new 2-hp. loom switch. Simply address your nearest G-E office or the General Electric Company, Schenectady, New York.

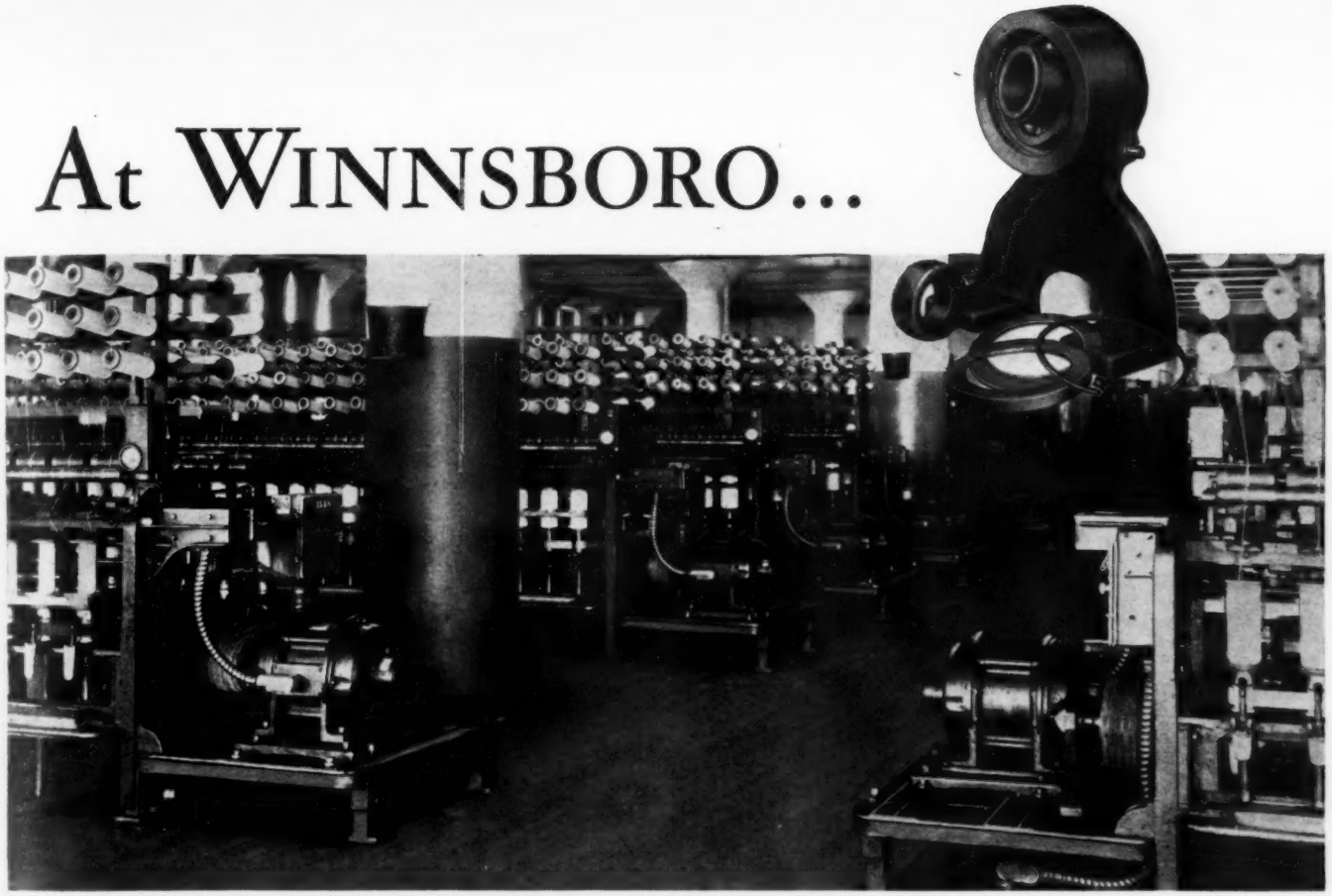
The new CR1062-B3 loom switch, double pedestal mounting

The CR1062-C2, 7 1/2-hp. loom switch

301-109

GENERAL ELECTRIC

At WINNSBORO...



Over 1200 FAFNIRS
all yielding rich returns

TWO twisters driven by a Fafnir-equipped 2-11/16-in. shaft, typical of the more than 200 such at Winnsboro Cotton Mills, were tested. Power requirements had decreased to such an extent that the savings effected represented a 64% return on the ball bearing investment. And there are over 1200 of these Fafnir Ball Bearings in the Winnsboro Mills!

From this saving alone the change to Fafnirs was worth while. But in addition, lubrication decreased to a twice yearly greasing. Oil drip vanished. Adjustments and maintenance of any sort except normal lubrication are now unnecessary.

There's another economy with Fafnir Transmission Equipment—the simplicity of installing. No sleeves, no shaft shoulders, no lock-nuts or adapters are used. The self-locking collar holds the bearing firmly in place.

No other bearing combines the simplicity of installation and economy of operation of Wide Inner Ring Ball Bearings which are used in Fafnir Transmission Equipment. Complete description is contained in the Fafnir Power Transmission Catalog. Write for a copy.

THE FAFNIR BEARING CO., NEW BRITAIN, CONN.
Representatives also at Atlanta, Ga.; Charlotte, N. C.; Dallas, Tex.; Houston, Tex.; Boston, Mass.; Birmingham, Ala.

FAFNIR BALL BEARINGS

No longer must you choose between *freedom from oil spots and Minimum Power Costs*

Gargoyle Lubricants *give you both*

Many textile mills in trying to avoid oil stains have frequently neglected correct lubrication. This has often added to plant operating expenses.

Today a complete new line of Gargoyle Lubricants, made specially for textile machinery, makes it possible for any textile mill to eliminate oil-drip and oil-throw and still keep power costs at a minimum.

These new oils were developed only after months of experiment on all types of textile machinery. They are perfectly balanced. Special treatment has given them a film strength and "oiliness" which makes them adhere to moving parts for long periods of time. At the same time, their body is such that excessive fluid friction is avoided.

Tests in leading mills have proved that these new oils, correctly applied, have produced:

1 Power savings (varying from 5%-16%) amounting to many times the actual cost of the lubricants.

2 Substantial reduction in oil-throw resulting in far fewer seconds and rejects.

Ask a Vacuum representative to show you the results of actual tests made with these new oils—to suggest how Gargoyle Lubricants and Vacuum engineering service can lower costs in your mill.

GARGOYLE

Lubricating Oils

VACUUM OIL COMPANY, Inc.

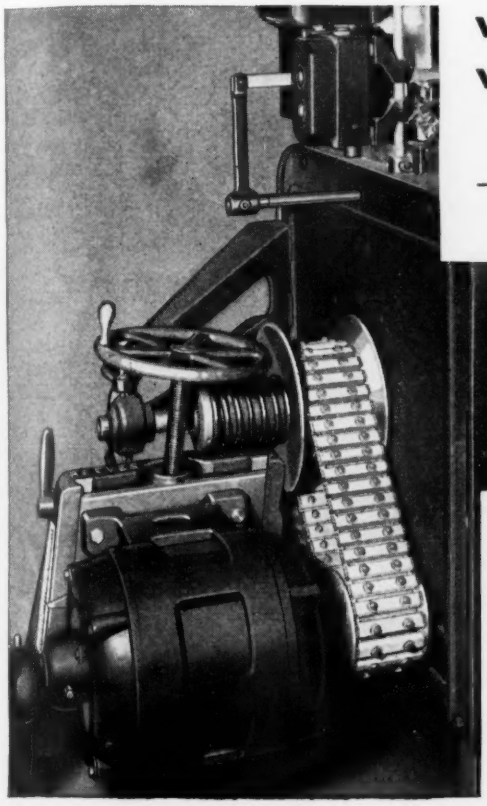
A SOCONY-VACUUM COMPANY

61 Broadway, New York City · Branches and distributors throughout the world

REEVES★ announces a remarkable new SPINNING and TWISTER FRAME DRIVE

with AUTOMATIC variable speed control

—giving uniform tension and twist on the yarn at all times



Front view of REEVES Drive, showing motor on vertical sliding base, adjusted for starting speed by handwheel at top. As motor moves down, V-disc pulley on cylinder shaft expands, giving a faster driving speed.

ADVANTAGES:

1. Uniform tension on yarn from empty to full bobbin.
2. Better quality of yarn—more uniform in size—greater breaking strength.
3. Faster production and larger packages.
4. Instant speed adjustments for different yarn numbers.

Rear view, showing ratchet actuated by arm leading from traverse shaft of spinning frame. Automatic movement of ratchet gradually moves motor down, increasing speed of bobbins and front rolls.

● This modern, compact variable-speed drive definitely solves a serious problem that for many years has confronted textile engineers in the operation of ring spinning and twister frames.

With constant-speed drives, there has been no way to maintain an even tension and twist on the yarn. As the diameter of yarn on each bobbin increases, the tension of the yarn *actually decreases,* causing the yarn to have uneven tension, uneven twist and uneven strength.

Speed Increases as Bobbins Fill

With the REEVES Drive, *automatic* variable speed regulation is provided. The proper starting speed of the cylinder (for empty bobbins) and maximum speed (for full bobbins) are established on a convenient speed indicator. Then, as the bobbins gradually fill, the *speed automatically increases* in the proper ratio up to the maximum limit, giving uniform tension on the yarn from empty bobbin to full bobbin. This automatic speed variation, under positive control, insures a better quality of yarn, of more uniform size, twist and strength, as well as faster production. The increased production alone pays for the drive in short time.

This complete drive, with its automatic variable speed facilities, requires no more space than the ordinary constant-speed individual motor drive. Readily installed on frames now in service, for either warp wind or filling wind. The entire mechanism of the drive and the automatic control is quickly understood by any operator. Speed settings for various yarn sizes quickly established. No costly delays!

Proved in Actual Mill Installations

The REEVES Drive has been perfected and approved after an extended period of development and refinement, including exacting tests in a number of mill installations. It is offered with full assurance of efficient, dependable performance—backed by the long-established REEVES reputation.

The mechanical details of this money-saving drive, and its many distinct advantages—together with charted results of exacting tests—are fully described in REEVES Bulletin No. W-200. Send for your copy.

★ REEVES is the leader in the specialized field of speed-control engineering and equipment, being also manufacturer of the well-known REEVES Variable Speed Transmission—more than 60,000 now in use.

REEVES PULLEY COMPANY, Columbus, Indiana

Please send Bulletin W-200, illustrating and describing REEVES Variable Speed Drive for Spinning and Twister Frames.

NAME .....

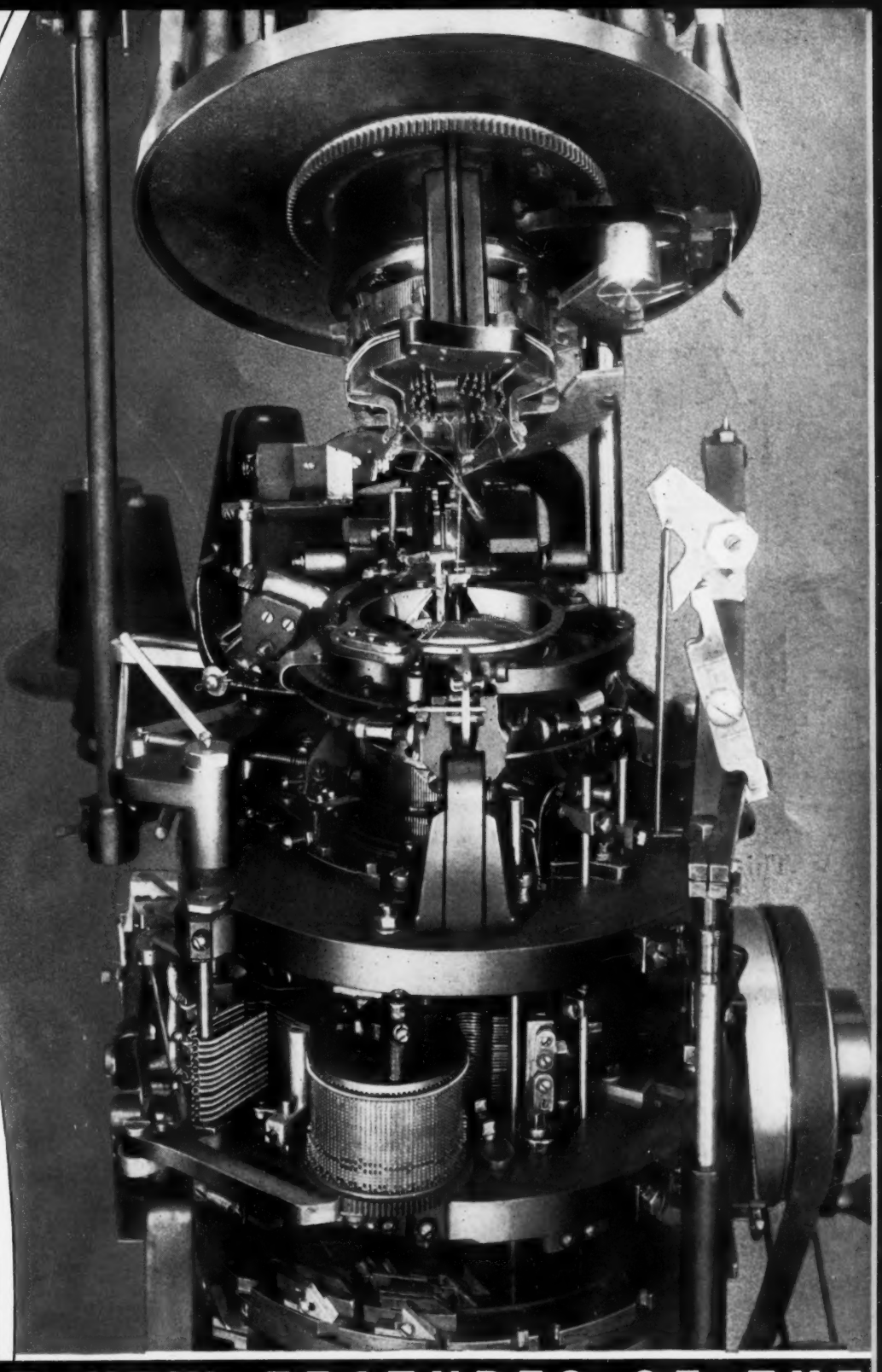
COMPANY .....

ADDRESS .....

Starting or Running TEXROPE DRIVES perform . . . . .

with a smoothness that is difficult to obtain in other types of drives. Scientifically produced belts, accurately machined sheaves and correctly designed drives are responsible for the smooth operation found only in genuine Texrope Drives. Remember these facts when you are in need of drives for Twisters, Spinning Frames, Quillers, Sliver Laps, Gassing Machines, Warpers, Winders, Cards, Slubbers, Roving and Drawing Frames. May we send you a copy of Textile Folder No. 2126 or make recommendations for your requirements? . . . . . *Write to Allis-Chalmers Mfg. Co., Milwaukee, Wis.*

ORIGINATED BY ALLIS-CHALMERS
TEXROPE DRIVES
THE DRIVES THAT REVOLUTIONIZED TRANSMISSION PRACTICE • • •



STANDARD TRUMP

Established 1872

NOTE THESE NEW FEATURES OF THE

CLEAN CUT DESIGNING SPEAKS FOR ITSELF

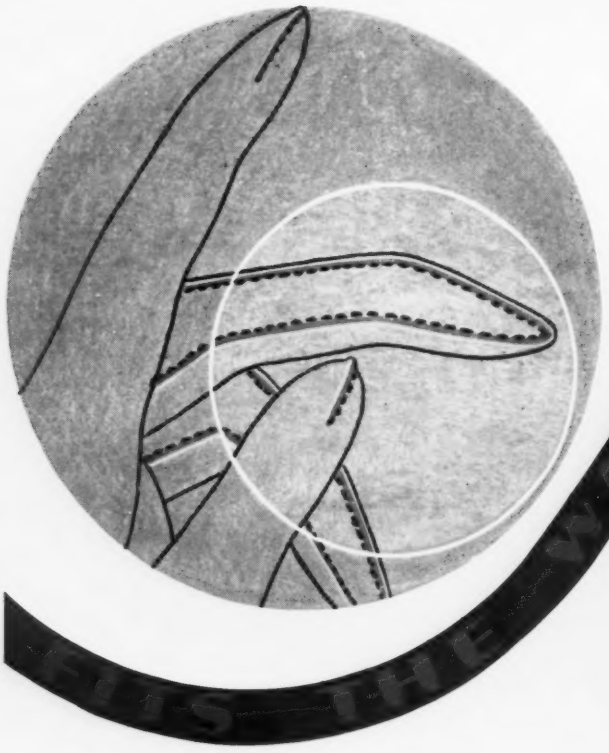
STANDARD 80 WRAP MACHINE

All pattern mechanism is in the front, for accessibility. . . wrap head can be put back, for clear view of the fabric . . . with wrap head back, it can be run as plain machine. Wrap yarns are knit without tension.

Mill owners, superintendents and fixers can see that the Standard 80 Wrap Machine has been designed from *their viewpoint* for mill operation . . . as well as to produce exclusive fabric.

STANDARD-TRUMP BROS. MACHINE CO.
INCORPORATED

366 BROADWAY · NEW YORK · N. Y.



This is the "GUSSETOE"... a toe with an actual gusset, knitted in, to give it depth ... the way a glove is gusseted to fit the finger.

There is NO SEAM to interfere with perfect smoothness at the tip; no "bulge" at the toe; no need to strain the fabric with smoothing out, for this "Gussetoe" is tailored in the knitting to the shape of the foot. It's an exclusive feature. See it on the product of Scott & Williams machines.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

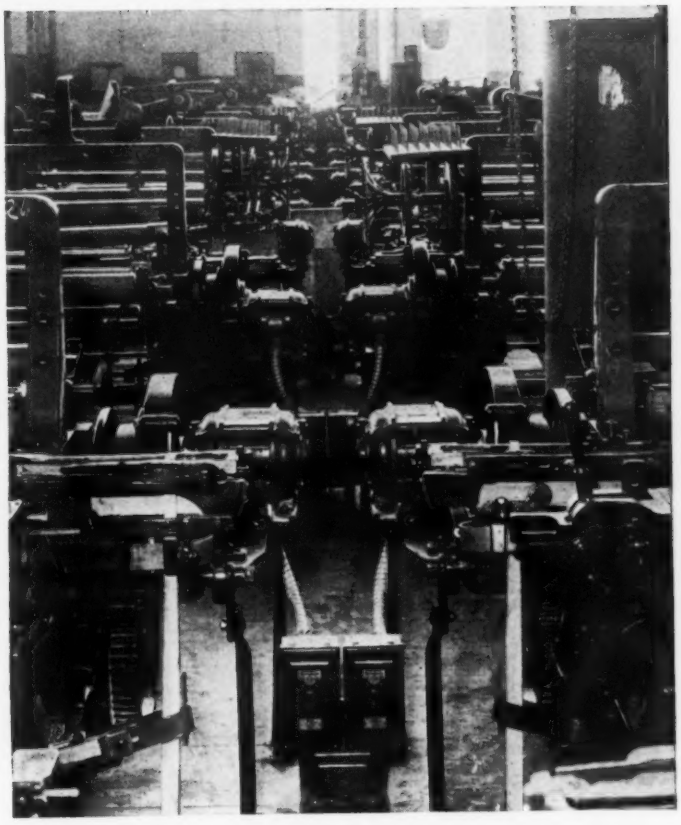
Established 1865

SCOTT & WILLIAMS

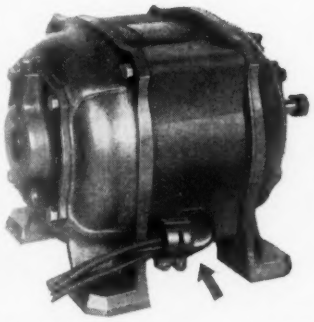
Incorporated

366 BROADWAY NEW YORK, N. Y.

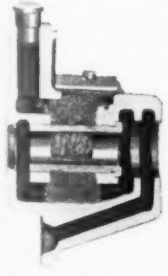
A weave room in a Southern mill equipped with ½-horsepower Westinghouse Loom Motors and Control.



THIS LOOM DRIVE *defies* VIBRATION - LINT - HUMIDITY



Vibration can never cause the conduit fitting to drop out of frame as it is screwed in place.



Cross-section of waste-packed bearing. Note the provision for easy oiling and the overflow drain that prevents excess oil from entering the motor.

THREE arch enemies, vibration—lint—humidity, lurk in every weave shed, waiting to lower the efficiency and shorten the life of your loom drives.

The Westinghouse Loom Drive is fully protected, assuring maximum economy of operation.

VIBRATION-PROOF

Motor is extra heavy to maintain alignment. Conduit squeeze-connections can't shake loose.

Starter has "click" type overload thermostats whose positive operation is unaffected by vibration.

LINT-PROOF

Motor is totally enclosed to exclude dust and lint from windings.

Construction of bearings prevents "wicking" of oil. Positive action of starter operating mechanism is unaffected.

HUMIDITY-PROOF

Motor windings are triple-guarded against moisture by a series of three impregnating and baking processes. Switching mechanism of starters is cadmium plated to prevent corrosion from moisture.

Switch contacts are non-oxidizing.

Other features of Westinghouse Loom Drive that assure low installation, operation and maintenance costs are described in Leaflet 1289-A. Mail the coupon for your copy.

T 79193

Westinghouse

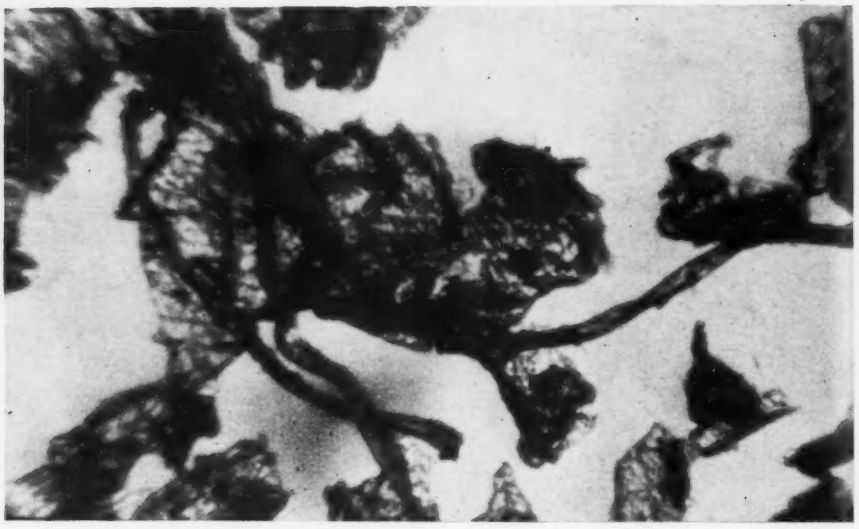
Quality workmanship guarantees every Westinghouse product

C O U P O N

Westinghouse Electric & Manufacturing Company
Room 2-N—East Pittsburgh, Pa.
Gentlemen: Please send me a copy of Leaflet 1289-A, Loom Motors and Control.

Name .....
Company .....
Address .....
City ..... *State* ..... TW 6-32

LOOM DANDRUFF



"Loom Dandruff." Shedding from loom showing flaking-off caused by over cooking of the starch granules (highly magnified).

Is Your Weave Room Afflicted?

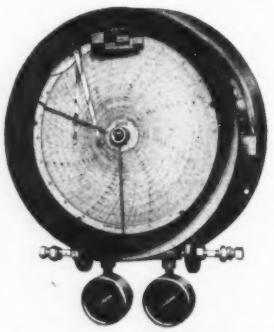
The dandruff like particles that settle around your looms are a sure sign of poor slashing. This shedding of the size is costing you real money.

"Loom Dandruff" is caused by over or under cooking the size or by over drying the yarn.

Look to your slashers! Temperature control will banish "Loom Dandruff." Accurate Foxboro Temperature Controllers hold the temperature just where you want it. It means *fewer breaks* on the loom. Automatic control on slashers should pay for themselves in three months.

Each Foxboro Recorder-Controller is sealed with a guarantee of permanent calibration, which assures you accurate control and accurate records day in and day out as long as the Instrument is in service. *Not only do we guarantee our instruments but, if we can analyze your problem, we will guarantee results.*

We have some interesting data on slasher operation. One of our engineers will be glad to show it to you. Write today.



AUTOMATIC TEMPERATURE RECORDER-CONTROLLER

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

THE FOXBORO COMPANY
FOXBORO, MASS, U. S. A.
Offices in Principal Cities

. . . Complete Industrial Instrumentation . . .

Over 400 *Textile Mills now use Condor Textyl Belts*

LONG & SHORT of Condor Belts

For long or short center distances, there is a Condor Belt that can do the job, efficiently and economically.

Condor Flat and V-Belts have won wide acceptance in hundreds of Textile Mills because of their *sound economic worth*, conclusively demonstrated on a large number of applications.

More than 29 years ago, Manhattan Engineers perfected the basic design embodied in all Condor Belts, and provided Industry with the first high-grade Red Friction Surface Transmission Belts.

Thousands of users are finding Condor Belts *cut* their power transmission costs.

Have you tried Condor Belts?

Condor LINE

Flat Belt	Fire Hose
V-Belt	Steam Hose
Cone Belt	Mill Sundries
Air Hose	Suction Hose
Acid Hose	Oilless Bearings
Water Hose	Rubber Lined Tanks

Rubber Covered Rolls

Sold by leading jobbers

The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc
Executive Offices and Factories, Passaic, New Jersey

3/4 Horse Power Type SC Squirrel Cage Induction Loom Motor

ENCLOSED LOOM MOTOR

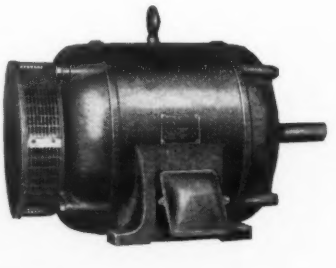
Installation permanence, long life and demonstrated ability to "Keep a-Running" are features of Century Squirrel Cage Enclosed Loom Motors.

Totally Enclosed—Field and Rotor and all essential parts completely isolated from the outside air. Field windings proven by service. The rotor of a Century Type SC Squirrel Cage Motor is practically indestructible—High conductivity, soft drawn copper bars are firmly anchored in the laminated core, with ends brazed into channel-shaped rolled copper end rings over an area equal to about six times the area of the individual conductor bars. Core and shaft are so proportioned and assembled as to make them adaptable to the shocks of rapidly fluctuating loads. Bearings are of Cast Phosphor Bronze, the best bearing material obtainable. At least one year's continuous, 24-hour-per-day operation, without reoiling, is assured by the Century Wool Yarn System of Lubrication, which is used on all one horse power and smaller motors.

Century Polyphase motors are built in various types and standard horse power ratings from 1/4 to 250.

Century MOTORS

Century Totally Enclosed Fan Cooled Squirrel Cage Induction 3 Phase Motors provide full protection to the windings, armature and other internal parts of the motor when operated in surroundings where dust, dirt, dampness and fumes are present in objectionable quantities.



CENTURY ELECTRIC COMPANY, 1806 Pine St., St. Louis, Mo.

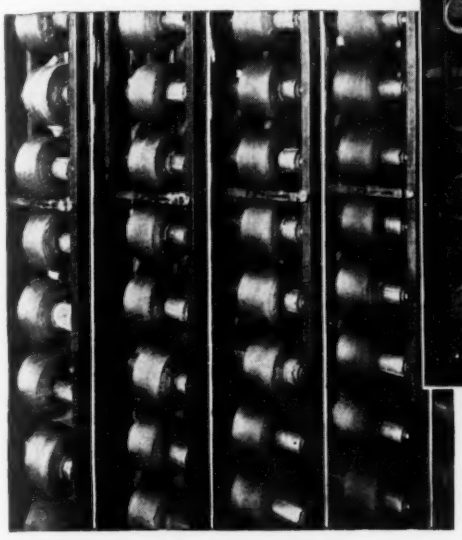
40 U. S. and Canadian Stock Points and More Than 75 Outside Thereof

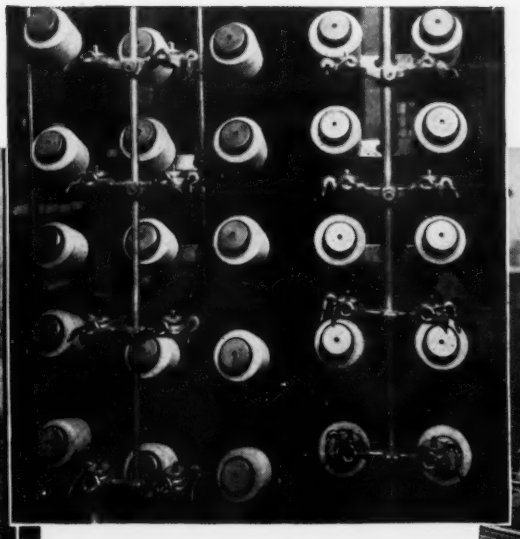
SINGLE PHASE, THREE PHASE AND DIRECT CURRENT MOTORS · MOTOR GENERATOR SETS · ROTARY CONVERTERS · FANS AND VENTILATORS

SC-3-3/4

FOR MORE THAN 28 YEARS AT ST. LOUIS

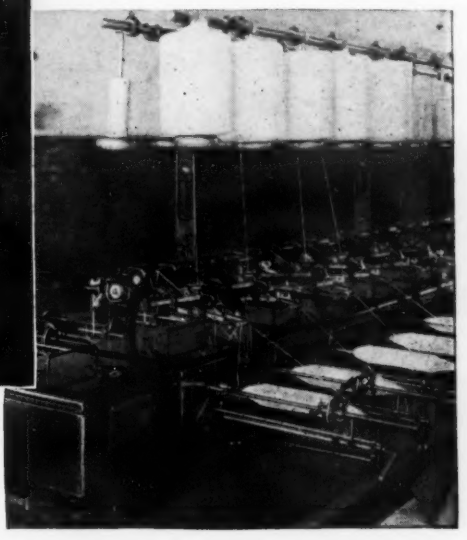
Franklin packages delivering by rotation from a creel, 40/1 yarn.





Franklin packages delivering overend from a high speed creel at 300 yards a minute, 40/1 yarn.

Franklin packages delivering overend on a No. 90 Universal filling winder. They will deliver equally well from below the spindles.



FOR WARP · OR FILLING

THE FRANKLIN PACKAGE IS AN EXCELLENT SUPPLY

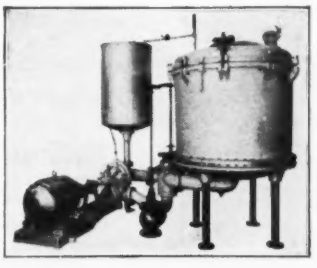
For rotating in a creel, the Franklin package is equipped with a wooden skewer which prevents the package from rubbing against the sides of the creel and eliminates chatter on the spindles. This and the fact that the package, when equipped with a skewer, is about the same weight as a spool of yarn, produces warps of even tension, even when pattern warps are required.

PURCHASE ON PERFORMANCE

The Franklin package is also an excellent overend supply, either in a high speed creel or on a No. 90 Universal filling winder. 40/1 and 50/1 yarns are regularly run overend from Franklin packages in a high speed creel at 300 yards a minute and on a No. 90 Universal winder at 250 yards a minute. Delivery near the spring tube without waste is assured by the use of a special ball top skewer. Experience has proved that, for both warp and filling, the Franklin package is a much better supply than a 5/8" rigid tube package. In addition to the advantages already mentioned, the yarn does not sluff off down near the tube, when delivering overend.

Franklin Process package dyeing machines do not have to depend upon their performance in the dye house, alone, to establish their superiority. Their record of economy in the mill, as regards handling cost of the dyed yarn, is also unequalled.

The numerous points of Franklin Process superiority are fully explained in our booklet, "Franklin Process Package Dyeing Machines." Write for a copy on your business stationery.



FRANKLIN PROCESS COMPANY

Manufacturers of Package Yarn Dyeing Machines, Jackspool Dyeing Machines, Worsted Top Dyeing Machines, Wool and Cotton Raw Stock Dyeing Machines and Silk Soaking Machines. Also Custom Yarn Dyers.

Providence, Philadelphia, Greenville, S. C., Chattanooga, Tenn.

FRANKLIN PROCESS

. . PACKAGE DYEING MACHINES . .

CHLORINE

● Industrial users of chlorine appreciate the important part modern container equipment plays both in safeguarding the original purity of the product and in guaranteeing satisfactory service.

At the Mathieson plant, rigid inspection of all equipment, from single cylinders to 30-ton tank cars, doesn't terminate when the usual safety requirements are met. No container of Mathieson Chlorine is sent on its journey to the consumer until careful testing assures that all valves, threads and other parts are clean, accurately placed and in perfect working condition.

This type of chlorine handling equipment is placed at your service the moment you specify Mathieson Chlorine. Behind it is the reputation of one of the oldest and largest manufacturers of chlorine in the world.

The* MATHIESON ALKALI WORKS *(Inc.)
250 Park Avenue, New York, N. Y.

Soda Ash . . . . Liquid Chlorine . . . . Bicarbonate of Soda . . . . HTH (Hypochlorite) . . . . Caustic Soda . . . . Bleaching Powder . . . . Ammonia, Anhydrous and Aqua . . . . PURITE (Fused Soda Ash) . . . . Solid Carbon Dioxide